

AMERICAN AGRICULTURIST.



Agriculture is the most healthful, the most useful, and the most noble employment of man.—WASHINGTON.

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NO. IV.

A. B. ALLEN, Editor.

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CULTURE OF THE HORSE-RADISH.

THE soil most suitable for the production of horse-radish in perfection is that which is light and friable, and of considerable depth; and if any part of the garden is damper than another, that should be appropriated, but it should not be saturated with water. In autumn, let the ground be trenched three feet deep, turning down with the surface soil a liberal dressing of good barn-yard manure. Let it lie, rough, and exposed to the weather, during winter. In spring, at the time of planting, add a second dressing of decomposed manure, turning it under two feet deep. The whole of the manure will now be two feet, or nearly so, below the surface of the ground.

In proceeding with the planting, first measure the ground into rows eighteen inches and four feet apart alternately. Stretch the line at the first row, and dig a narrow trench two and a half feet deep, placing the earth beyond the first row. Then take pieces of horse-radish roots six inches long and place them about ten or twelve inches apart in the bottom of the trench. It is quite immaterial which part of the root is planted, as every part grows without the least difficulty. When this is done, remove the line to the next row, and trench the earth as before, placing the soil over the first row planted, and so continue until the plot is finished, when the soil taken out of the first trench will fill the last. During the summer, keep the ground well forked over and clear of weeds; and, to strengthen the plants, two or three supplies of manure-water will be of great service, as the plant delights in moisture. When liquid manure is applied, it should be given in sufficient quantities to reach the lowest roots.

In taking up horse-radish for use, a trench should be opened at one end of a double row, as deep as the lower roots in order that they may be taken up

of a proper length, and that a sufficient supply may be dug to last two or three months in winter and spring, as it may be kept in excellent preservation for a long time in sand. In cutting up the roots, from four to six inches of the bottom part should be left in the ground, for the purpose of insuring another growth; for the same ground and the same roots, when once planted, will continue for ever, if the same culture, as recommended above, be pursued from year to year.

If these directions are carried out, we have no hesitation in stating that, in one season after planting, an article will be produced creditable to any market, the truth of which will be manifest to any one who will take the trouble to visit the garden of Mr. Junius Smith, at Astoria, on Long Island.

FARM OF GENERAL JOHNSON.

THE farm of General Jeremiah Johnson is situated in the city of Brooklyn, between the village of Williamsburgh and the United States Naval Hospital. It contains 145 acres, about 80 of which are under cultivation, 21 acres in mowing, 2 acres in kitchen garden and orchard, and 30 acres in pasture and wood-land. This is said to be the only farm on Long Island remaining in the same family, having been tilled by its present occupant for more than 60 years. His dwelling, which is jointly occupied by his son, Mr. Barney Johnson, is an old-fashioned double house, one and a half stories high, with two wings, and commanding an extensive view of the East River, the Navy Yard, and the adjacent parts of Brooklyn and New York. The stock of the farm, exclusive of that owned by the tenants, consists of five cows, seven horses, and a sufficient number of hogs for family use, all of which are kept in the best manner by soiling, or stall-feeding.

General Johnson has long since discontinued the cultivation of ordinary field crops, beyond his own consumption, finding it more profitable, from the proximity of his farm to a ready market, to raise garden vegetables; and as he has more land than he can manage himself, he rents a large proportion of his ground in lots, to ten market gardeners, at an average price of \$30 per acre. Like every considerate landlord, he reserves to himself the right of dictating what crops shall be raised by each of his tenants, the quantity and kinds of manure to be used, and the general modes of culture to be pursued, contributing, at the same time, towards the expense of improvements, loses no opportunity to stimulate his tenants to undertake them, and aids, advises, and encourages them during the progress; thus securing to himself the best results, and working out the great problem of obtaining the largest amount of produce from his land at the smallest cost, and for the longest period. His land is kept in the highest possible state of fertility, by annually adding at least 1000 loads of barn-yard, street, or other manures; and he makes it a peremptory rule, that the same kind of manure and the same class of crops shall not be applied or cultivated on the same land two successive years.

General Johnson prefers the street manure from New York, and estimates it according to the part of the city whence it is obtained. He has applied both coal ashes and lime to his land, neither of which appeared of the least perceptible benefit; while the moderate use of common leached wood ashes was attended with good results. On, or near his premises, are several cow stables, from which he obtains a large amount of solid and liquid manures. The latter, in one instance, he conducts, by means of drains, into a reservoir, in which is placed a pump for the purpose of conveying it to his compost heaps, made up of all manner of rubbish, weeds, loam, and straw. In addition to the fore-named sources for obtaining manure, an increased quantity is derived from soiling his hogs, horses, and cows. The latter are kept up until August and fed upon clover, timothy, and the fodder of green corn, the advantage of which, over common pasturing, General Johnson estimates as seven to one. In winter, the cows and horses are principally fed on carrots and hay. The horses, however, are allowed more or less grain.

The vegetables cultivated upon this farm embrace nearly all the varieties sold in the market; but the principal and the most profitable crops consist of early York, early sugar-loaf, drumhead, and Savoy cabbages, Brussels sprouts, radishes, lettuces, leeks, early onions, parsley, spinach, large summer French red beets, Tobago and crook-necked squashes, and early potatoes.

General Johnson attributes the great abundance of weeds which usually spring up in cultivated fields, to the seeds which exist in the land—believing that they may remain there in a dormant state, perhaps for scores of years. To destroy the early growth of weeds, so injurious to tender plants, he considers it a good plan to prepare the ground for sowing, then to cover it with a good coating of dry rubbish or straw, and set fire to it, in order to burn the seeds of the weeds, kill the grubs and other

vermin in the soil, and thereby render it more fertile by the ashes left behind.

Although General Johnson has reached his eighty-third year, he is still active, retains his faculties, and devotes a considerable portion of his leisure time in translating some interesting works written in Dutch. We intend to visit his farm again in the course of the season, when we shall be able to give some further account of his crops and stock.

COLEMAN'S EUROPEAN AGRICULTURE.

WE received Part VIII. of this work too late for notice in our March number. Save a portion of the article on "Live Stock," there is little to regret and much to commend in it. Mr. Coleman's account of the crops of Great Britain is clear and concise, though we notice that some of our contemporaries do not think it as full as it ought to have been. Those, however, who wish to learn more upon the subject, will find elaborate accounts of them in Johnson's *Encyclopædia of Agriculture*, and Stephens' *Book of the Farm*, both of which works are now republished in this country at a cheap rate.

On the subject of Live Stock, Mr. Coleman says: "I come now to speak of one of the most important topics connected with British Agricultural improvement." We are glad to hear him call this subject "important," for we also consider it eminently so, not only in England but in other parts of the world. Scotland and Ireland are rapidly following in her footsteps; several of the continental nations of Europe, also, have within the past twenty years, made large importations of her improved animals, and with these in hand, are fast emulating England's noble example. Nor are the United States and the British Colonies idle. They, also, have imported largely, and will ultimately outrival the Mother Country in the value and number of their improved animals.

Considering its importance now, we cannot but regret that Mr. Coleman had not given himself more time to investigate this subject, and that he should have treated it in the summary way he has. In his earlier numbers, he gave us long dissertations on matters and things in general, of less interest, as many thought, than live stock; yet, when he comes to this "important topic," he dismisses it all in less than 43 pages of large, open type. The thorough bred horse, the greatest improvement in "live stock" that the world ever saw, is not touched upon at all, notwithstanding his blood largely pervades much of the best farm horses of the United Kingdom. Among the highest prized and most perfect farm horses ever produced in Great Britain, were those of a direct cross of a stout Arabian stallion upon the large farm mares of the country. Some of the strongest English thorough breeds have produced wonderful excellent farm horses, crossed in the same way. The fine-woolled flocks of the country are not even alluded to; indeed Mr. Coleman says, "there are no fine-woolled sheep in Great Britain." Pray what has become of the numerous pure Saxony and Merino flocks of Mrs. General Doran, the neighbor and relative of the Duke of Richmond, at Goodwood, where Mr. Coleman speaks of often visit-

ing. Others, too, as we were informed, partook of this blood. But silence on these matters is a virtue, compared with the *incorrect* statements he has given of the origin and improvement of Short-Horn cattle, and some other things. We assure Mr. Coleman, in sorrow, not in anger, that if he can make the breeding public believe such statements as he has given in his report, he will soon put an end to all improvements; and those herds which have been fostered and grown up to such perfection, would, in less than half a century, entirely run out, or at best become so deteriorated, as to be scarcely distinguished from the common brutes of the country. Millions of dollars would be lost, and ages might pass away before neat cattle could be brought back to their present state of perfection. He would completely upset the science of correct breeding, and do more injury in this report of his, than he could do good, though he might live a thousand years. We shall now proceed to point out some of his errors, which, in justice to breeders, and in our duty as a public journalist, we feel bound to do minutely.

Mr. C. "The whole object of the famous Herd Book is, indeed, to trace back all these diverging streams to a single fountain, and thus, by an uninterrupted descent, to demonstrate the purity of the blood."

We wish this were really the case; but most unfortunately such is not the fact, as any one can see for himself who will take the trouble to turn to this said "famous" book. There he will find that the cupidity of its first editor, and the breeders of grade and mongrel cattle, have monopolized three-fourths of its pages with the *records* of animals (we will not disgrace the word by calling them *pedigrees*), totally unworthy of a place in it. In this respect it is unlike the Stud Book, which contains as true a record as it is possible for humanity—under existing circumstances—to make of a race of horses bred in England from pure Arabian blood of the very best kind, both on the side of sire and dam. Nevertheless, the Herd Book is a valuable publication to him who truly understands its pedigrees, and the respective value of the first animals recorded in it. The good strains of blood he knows there, and breeds from them; the bad he avoids; thus, the latter serve him the same purpose, that beacons and buoys do the navigator;—they enable him to steer clear of danger. In future editions they ought to be expunged; and, with the light of the present day on this subject, it will be a shame to England if they are not. But we fear the poison is too deep in the body politic to ever hope for a reform in this matter.

Mr. C. "The famous bull, Comet, is still considered as the unrivalled paragon of excellence; the celebrated Durham ox remains without a successful competitor."

As Mr. Coleman himself never saw Comet, we should be glad to know on what authority he makes the above "paragon" statement. Old breeders, and excellent judges of Short-Horn stock, informed us, when in England, that several bulls of his own day were far superior to Comet; and that, at the present time, he would scarcely pass muster in a show-yard among the third-raters of his class. Mr. Wright declares, that he had a *deformed* shoulder! To coin a word, what *paragonism* was there in that? But, perhaps, Mr. Coleman's authority is

more learned and wise than ours. As for the Durham ox, he could easily be beaten nowadays at any Smithfield annual show of fat cattle, except, perhaps, in great weight, which, in itself, is not considered an excellence by good breeders.

Mr. C. "If we have a true history of the stock of the improved Durham cattle, it is the result of a cross of a Teeswater bull with a Galloway cow."

We do not know what some people would call "improved;" but if we are to understand that the good Short-Horns were thus made, then we must say, with all due respect to Mr. Coleman, that a more erroneous statement than the above was never penned, nor one less susceptible of being proved; and we do not care who his authority is; and, furthermore, we firmly believe, that when he comes to bring his naturally fair and candid mind to a more thorough study of animal economy, and the correct principles of breeding, he will perceive that he has been misinformed, and that the above assertion carries with it a *physical impossibility*. Why, this is out-Berrying Berry, who—after becoming interested in this miserable Galloway cross, and standing in fear of prison walls, from a hard-hearted, iron creditor—who was also deeply interested in the same base blood—in his weakness,—palmed off upon the unsuspecting Mr. Youatt, in his History of British Cattle, this false and ridiculous assertion of the *improvement* of Short-Horns. If this *improvement* was so manifest, how came Mr. Berry to be so slow in finding it out? Mr. Charles Colling had his sale of the Galloway cross at marvellous high prices, in 1810. In 1824, Mr. Berry wrote his first History of the Short-Horns, in which not one word is said of the *improvement*. In 1830, he published a second edition of this work, in which not a word is said on the subject, although upwards of twenty years had then passed since the Galloway cross had become notorious throughout England. In 1834, Mr. Youatt's work was published; but in the interregnum, Mr. Berry and others had become interested in the *alloy*, and hence, the change "o'er the spirit of their dream." But we have neither time nor space to follow out the subject at present, and will, therefore, defer it to a more convenient season, when we shall undertake to show why and wherefore the Galloway cross was made; and how it came to bring so high prices at Mr. Colling's sale; and why it has been vaunted ever since by a certain set, *who possesses it*, as a great *improvement*.

If Mr. Coleman wishes to know the true history of Short-Horns, let him inquire of the old breeders contemporary with the Collings and others in Yorkshire, Durham, and Northumberland; or let him refer to an account of them in the American Herd Book. We have the best reason for believing that Short-Horns were a superior race two centuries before the Collings came on to the stage of action as breeders. It was conceded by a company of old breeders in 1812, in discussing the question of the *improvement* of Short-Horns, that no stock of Mr. Colling's breeding ever equalled Lady Maynard, the dam of Phoenix, and grandam of Favorite. This superb cow was probably born at least 35 years before the public sale of the Galloway cross. Mr. Charles Colling often said that he never bred so good a cow as the one he purchased from the agent of the Duke of Northumber-

land, as early as 1784, 26 years before the *improved* Galloway cross was sold; and it is well known, both in England and in this country, that the animals entirely free from the Galloway strain, still bring the highest prices and are most eagerly sought for by judicious breeders. To establish one point, Mr. Coleman quotes from an article on Short-Horn cattle by Mr. Wright, published in the last number of the Royal Agricultural Society's Journal. It is a great pity he did not read this excellent article with more attention and profit. By recurring to it again, he will find that Mr. Wright incidentally claims great antiquity of blood for the Short-Horns; also this emphatic passage:—

"Improvements have often been anxiously sought for by crossing with other breeds, and many valuable specimens have been exhibited; but it may be asked, what breed is there that CAN IMPROVE the Short-Horn? I have seen many extraordinary animals from the cross with the West Highland Scot, but we do not find their offspring uniformly improving by each succeeding cross; there is GREAT UNCERTAINTY in their progeny. The polled or Galloway Scot progresses with less variation in the produce, and continues to improve by subsequent crosses; but neither of them GIVES ANYTHING to the Short-Horn, though the Short-Horn ADDS MUCH to them. Alloy being once introduced into any breed of animals will at certain times, and that, too, at very remote periods, *show itself in their offspring*. In a race-horse, *how many crosses* from a cart-mare would it require to produce a race of animals able to *compete* with the original thorough-bred one? And if you chanced to have *one superior animal* of that kind, *who would dare to venture upon the next produce as being equal to the thorough-bred one?*"

Mr. C. "The Teeswater or Yorkshire stock are a large and coarse boned animal; the object of this cross [the Galloway] was to get a smaller bone and great compactness."

How is it possible that Mr. Coleman can make such an assertion, after spending three years in England, and still there, or near by? Let him get any respectable authority to assert, if he can, that Hubback was a "large coarse boned animal;" or that any of the Duchess family, or the Red Rose, the Daisy, the Princess, the Lady Maynard, or the Haughton tribe were; or the herd of Sir Henry Vane Tempest, or Mr. Mason's, or, indeed, other good Short-Horn stock that had not yet been touched by the "improved" infusion of Galloway blood.

The residue of the long paragraph from which we have made the two short quotations above, is a mixture of the true and false (we do not use the word *false* here in an invidious sense), jumbled up in a way which shows that Mr. Coleman does not understand the subject upon which he is writing, and which, for his own reputation and the public good, he had better never have meddled with.

Mr. C. "It will, I think, not be denied, that they [the Short-Horns] are great consumers. An intelligent herdsman, who had been accustomed to the feeding of fattening animals for eighteen years, and, with respect to whose judgment, I know of no private interest to affect it, gave it to me, as his decided experience, that the Short-Horns require a

third more food than the Herefords. This judgment must go for what it is worth."

That the Short-Horns generally are great consumers for the weight of flesh they carry and the quantity of milk they give, we deny most emphatically. There are many of this breed which we will engage to turn out on as "short a pasture," or tie up to as "scanty a manger," as Mr. Coleman could desire; and he may bring any cattle of nearly equal size, of any breed he pleases, to compete with them; and we predict the said Short-Horns will thrive and look as well as those of Mr. Coleman's choice. As for the opinion he quotes of the Short-Horns "requiring a third more food than the Herefords," it must indeed "go for what it is worth." If Mr. Coleman had a true idea of animal structure and the power of its respective parts, he would not have repeated so one-sided a statement. A very fine Hereford by the side of a very bad Short-Horn, would, most probably, consume one-third less, and the case would be reversed were the former a bad animal and the latter a fine one. Other things being equal, there is little or no difference in the consumption of food, for the relative amount of beef and milk made from it, with these justly rival breeds, or, indeed, with any other well bred cattle.

Mr. C. "The finest herd of Short-Horns which met my observation—though it must be remembered that, if I have seen many, they are but few compared with the whole number to be seen—I found in Lincolnshire, in the possession of one of the best farmers in England, a tenant of Lord Yarborough. They were not in the Herd Book, but had been in possession of the family more than fifty years. A superior lot of cows, in appearance and condition, I never saw, nor expect to see; but they were not distinguished for their milking properties."

We also passed through Lincolnshire two years previous to Mr. Coleman, and saw something of the herds of cattle there, and also made diligent inquiry for them; yet beg, with great deference to his superior judgment, to say, that we were not quite so fortunate as himself, for we neither saw nor even heard of any such fine animals, "not in the Herd Book." But, it seems from Mr. Coleman, that the "finest herd" are "not distinguished for their milking properties." Then the more is the pity; for the word "finest" we understand him to use in the sense of *choicest* or *best*. If so, we can only add, that no respectable breeder in America would class his cows as "choicest" or "best," which, in addition to fine fattening properties, did not add that of deep milking; and so we understood this matter among the good breeders when in England. But, perhaps, things have changed since we were there.

Mr. C. "The property to take on fat is considered inconsistent with that of large secretions of milk. This is not without exceptions within my own knowledge, but is generally true."

We deny that the above assertion is "generally true." Many of the best milkers fat as kindly as any other animals in existence; and if proper pains be taken in breeding cows, this will be the case in nineteen out of every twenty, or, perhaps, ninety-nine out of every hundred. Any one who

properly understands animal economy, and is an adept in his business, can either breed the single quality of fattening or milking in his herd, or a combination of the two, just as he pleases. The one, so far from being incompatible with the other, may be easily united with it, and often is so united, as can be shown both in the United States and Great Britain. But we will quote an excellent authority on this subject.

"Experience has also proved another thing—that the good grazing points of a cow, and even her being in fair store condition, do not necessarily interfere with her milking qualities. They prove that she has the disposition to fatten about her, but which will not be called into injurious exercise until, in the natural process of time, or designedly by us, she is dried. She will yield nearly as much milk as her *unthrifty* neighbor, and milk of a superior quality, and at four, five, or six years old, might be pitted against any *Kyloe*, while we have the pledge that it will cost as little to prepare her for the butcher, when we have done with her, as a *milker*. It is on this principle that many of the London dairymen now act, when they change their cows so frequently as they do."—*History of British Cattle*, page 246.

Mr. C. "A large proportion of the Short-Horns stand too high, and have too long legs. The Herefords are not exempt from this fault, but have less of it; but they lack substance and breadth behind."

This is a new discovery to us. We never observed that Short-Horns and Herefords had long legs. We should like to take the tape-line in hand, and go on a measuring expedition with Mr. Coleman—Short-Horns and Herefords *vs.* any other breed he might please to name. The rule of our decision should be, the length of the leg in proportion to the size of the animal under consideration. We will engage to beat him out and out, at least on this side of the water.

Although Mr. Coleman may deny that such were his intentions, still the gist of his remarks goes to prove that Short-Horns are an unprofitable dairy stock. If not, why does he make the following and other remarks, on the large quantities of milk it can be proved that they have given?

Mr. C. "At a large milk establishment in Edinburgh, kept by a woman, she told me that she had owned a Teeswater or Yorkshire cow, which had given twenty-two Scotch pints, or forty-four quarts, of milk, per day. I was assured of this woman's credibility; but then, with a perfect respect for the conscientiousness and good intentions of the sex, I habitually distrust their arithmetical accuracy, whether in regard to their own age, if they are far on the journey of life, or to other matters. It is not in their way to remember numbers exactly. The great astronomer, Mrs. Somerville, is a rare and magnificent exception."

Now why should not this good woman be believed, especially after being "assured of her credibility?" Pray, sir, is it a thing more extraordinary that this cow should give forty-four quarts of milk per day, than that another should cut 12 inches of perpendicular fat on the rump, 10 inches on the loin and croup, and 9 inches on the shoulder; or that single oxen should weigh from 3,000 up to 4,000 lbs.?

When in England, we were informed that it was on record in one of the parish registers of Yorkshire, we believe, that a cow of last century gave fifty-one quarts at three milkings in *one day*; and added our relater, a highly intelligent and respectable man, "this is as well an attested fact as any other in history." Several Short-Horn cows in the United States have produced from 28 to 38 quarts of milk per day; and one instance of 38½ quarts per day was sworn to before a court of justice by at least six respectable witnesses. We saw a grade cow at the West, whose owner informed us, gave 41 quarts per day. Perhaps, with Mr. Coleman, we ought to distrust his "arithmetical accuracy."

Mr. Coleman is himself a witness of Short-Horn cows having produced the *largest* quantity of milk per day of any others on record. Mr. Bailey gives, in the *History of British Cattle*, an account of a Short-Horn cow yielding 3 oz. 6 dwts. of butter from *one quart* of milk. Mr. Coleman asserts, that the Alderney cows "surpass all other breeds for the extraordinarily rich and creamy quality of their milk." We shall be greatly obliged to him if he will hereafter show us anything superior to the milk of the Short-Horn cow above, either in an Alderney, or, indeed, in any other breed. He has certainly thus far failed to do so in his report.

Mr. Coleman makes some assertions in regard to the South Devons and other stock, which we know, from our own observation, to be incorrect; but the length of this article warns us to stop, and we will not undertake to point them out at present. Several of the subjects in this report, particularly that on South Down sheep, are uncommonly well treated. We think, however, that some notice was due to the flock of the Duke of Richmond, also to that of Messrs Grantham, Ellman, and a few others, which, in our judgment, are scarcely inferior to Mr. Webb's.

We perform an ungracious task in writing this article, and one which we would gladly have avoided; but as important interests are at stake, situated as we are, we feel bound in duty and in honor to do it. We could say no less than we have, though the author of the report in question were our own brother. We have endeavored to treat Mr. Coleman throughout with all courtesy and fairness; and the more especially as he is still abroad, and it may be some time before he can see this article and reply to it. He asserts that "his opinion is given without any pecuniary bias;" we can add the same of ours; for it is several years since we ceased to have any pecuniary interest in Short-Horns, or, indeed, in cattle of any kind whatever.

VALUE OF BONE DUST FOR BUCKWHEAT.—A correspondent says that he sowed about 40 bushels of bone dust on five acres of buckwheat, and reaped from them 70 bushels, while the balance of the same field was not worth harvesting.

TO PREVENT FROTH RISING WHEN CHURNING.—A lady says she had well nigh given up making butter this winter; for, as soon as she commenced churning, the froth would rise. She tried every preventive that was suggested to her without effect, until she was advised to try *saleratus*, which she did, and that proved effectual.

A HAY CRIB.

FARMERS are not particular enough in saving their hay. They throw it out in the yard, where cattle tread it under their feet, without any regard to the quantity wanted. How much better they would eat it if kept from the filth of the yard in a crib made after the fashion of the following wood-cut.

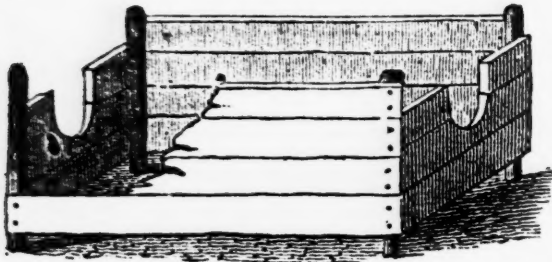


FIG. 24.

It would save what would be worth three times their cost. They are cheaply made by nailing boards on four posts, $4\frac{1}{2}$ feet long, $3\frac{1}{2}$ feet wide, and $3\frac{1}{2}$ feet high, with the feeding places at the ends $1\frac{1}{2}$ feet above the ground. The cribs should be made so tight that there can be no hay got except at the feeding places. The length given is such that the cattle can reach their food from the centre either way; and it is better not to have but two feeding at each crib, as they are more peaceable. Try it—two or three hours' work in making them, will save five times as many dollars.

BEAUTIFUL ENGRAVINGS OF ANIMALS.

WE invite our readers to call at our office, 187 Water street, and examine a series of engravings of animals, selected with great taste and care, by Francis Rotch, Esq., when in London last year. They are the choicest of their kind; and what makes them the more valuable is, they are actual portraits and correctly colored after nature.

No. 1. A stable of thorough-bred horses—the Emperor, Foigh-a-Ballagh, Charles Twelfth, and Alice Hawthorn. These are among the most celebrated horses of England.

No. 2. A stable scene of hunting-horses.

No. 3. A stable scene of coach-horses.

No. 4. A stable scene of farm-horses.

No. 5. A portrait of the excellent breeder, Mr. Crisp, and one of his superb South-down bucks. We saw them both when in England, and know them to be faithfully done.

No. 6. The Duke of Northumberland, a Short-Horn bull, bred by Thomas Bates, of Yorkshire. The Duke was the best bull of his day in England, and invariably took the first prize wherever exhibited.

No. 7. Duchess 34. A Short-Horn cow bred by the above. We saw both of these animals at Mr. Bates's farm, when in England, and compared their portraits with them, and consequently know them to be accurate.

No. 8. A Short-Horn ox bred by the late Earl Spencer. He was exhibited at the Smithfield Show of fat cattle, in London, December, 1839, and took the gold and silver medals, thus winning the highest prizes as the best ox of any breed exhibited that year.

No. 9. A Hereford prize ox, which took the first premium as above in 1840.

No. 10. A group of Leicester sheep.

No. 11. A group of South-down sheep.

These portraits are admirable models, and deserve the careful study of breeders, as well as all others desirous of obtaining a correct knowledge of domestic animals.

They are elegantly framed, and done up in a peculiar style, giving them the effect of the best specimens of oil paintings. We shall take pleasure in ordering copies of these or any others our friends may desire.

WASTE MANURE.

How many substances do we see lying about the country which might be gathered up and applied as manure; thus removing many an intolerable nuisance, and at the same time greatly increase our crops and add largely to the product of the land. Here is one—the refuse of glue factories. This substance has been recently analysed, and found to contain—

Water,	-	-	-	45.66
Hair,	-	-	-	1.10
Fatty matter,	-	-	-	23.34
Cellular tissue, and a little ammonia,				4.43
Phosphates of lime and magnesia, and a trace of iron,	-	-	-	2.30
Carbonate of lime,	-	-	-	20.06
Sand, and loss,	-	-	-	3.11

100 parts.

Our readers will now see that this refuse is a highly valuable manure, and should be sought for with avidity. They will find plenty of it poisoning the air of this neighborhood with its fætid odors. We presume the glue manufacturers, in several instances, would even pay for its removal. What would not Jack Chinaman give for a full swing at it!

TO OUR SOUTHERN SUBSCRIBERS.—It will have been perceived by the readers of the *Agriculturist* that we have added the name of R. L. Allen, 75 Camp street, New Orleans, to the names of our agents at the south. He has already sent us the names of a large number of the leading and most intelligent planters in Louisiana, and many in the adjoining states, who have voluntarily called on him to leave their subscriptions. Many at the south have been deterred from subscribing, heretofore, from the difficulty of forwarding payment, and some from the irregularity in receiving their papers through the country offices. To all such, the establishment of this agency offers an opportunity of taking the *American Agriculturist* with the same convenience and freedom from risk of not receiving it, as if it were printed in New Orleans itself. The money for one or any number of copies, either for the past, present, or future volumes, may be paid there, and by adding the postage, the numbers may be received at the office above indicated, or they will be sent to factors, or any other designated agents. We trust this arrangement will meet the wishes throughout so much of the south as make New Orleans their headquarters. Complete sets of bound volumes are also to be had at the same place.

TRANSPLANTING TREES.

IN a late communication for your paper, I made some remarks on the time and manner of taking up trees for transplanting. I now propose to resume the same subject; but, before I proceed to the preparation of the ground, into which the tree is to be placed, it may be proper to remark, that in removing trees, it is desirable, when it can be done, to take them from a soil as nearly similar to the one into which they are to be placed, as possible. It is better, however, to remove them from a wet to a moist, or from a moist to a dry soil, than the reverse; for if removed from dry to moist or wet land, unless they are of species usually found in such lands, they acquire sickly habits, which result in consumption of parts near the heart of the tree, and from year to year, the leaves are more and more subject to a premature ripeness and fall off, sometimes long before those of the same species in favorable locations, until at last the top begins to die, and eventually the whole tree is lost.

Another consideration is that of *pruning*. Evergreens should never be pruned at all. One of the choice elements of their beauty, is their branching limbs and fine conical heads; and much of that beauty is derived from the branches starting out near the ground, thus making the form from the earth upward, complete. If they *must* be deformed by the saw, however, let the mutilating process be performed, early in summer, when nature is most active, and the tree is in vigorous growth, in order that it may form its own panacea, and heal the wounds before disease commences and rottenness ensues.

The murderous and sacrilegious practice of cutting off the *tops* of trees, is still, by many, tenaciously adhered to. It is a practice, however, every physiologist must see the necessity of abandoning, when he considers that the ascending stalk is in reality the head of the tree, and that the branches are but appendages, or, in fact, so many trees of the same species, taking root in the main stalk and growing out therefrom.

Thus, it will be seen, that, if the main stem of the tree is taken off, its height is determined at that position, and whatever upward advances may be made in the way of top, are the result of these adventitious appendages, the branches, taking the place of the main shoot, and throwing up an artificial head. I would say, then, if you value the beauty, health, long life, or size of the tree, prune the side shoots as much as you please (but prune close, and with care) and nature will apply her remedy, and as the spreading roots increase, the means of procuring nourishment, new branches, endowed with the same faculties of self-provision and self-protection, will shoot out and fully replace those taken off to meet the exigencies of the parent tree, by providing shade for its roots, and furnishing myriads of leaves for the elaboration of sap, to provide for the wants of the growing trunk.

In preparing the ground for planting trees, the pit should always be made much larger every way than the size of the roots actually require; but in *setting*, a tree should not, in ordinary cases, be planted deeper than it originally grew. The pit should be filled up, with light earth or inverted turf, which,

in such a position, will soon become light earth, charged with vegetable remains; and, in time, will become the convenient and healthful food of the tree. When you have filled the pit so as to give the tree its usual depth, then, after setting, throw in and around, light earth, until the roots are well covered, after which, less care may be used.

Errors often arise, in selecting the *variety* of trees for transplanting. For instance, maple has, in time past, been the popular shade-tree. Hence, maples have been thrown into every soil and exposure, in consequence of which many have lost their labor with their trees, have become discouraged in tree-planting, and thereby their farm-buildings and waysides are left vacant of the beautiful and healthful embellishments. I say beautiful, because every one admires the regular symmetry, and just proportions of a well-formed and vigorous tree, and in these days of well-directed taste, the dwelling seems to lack a necessary appendage, that stands in "unblushing nakedness," with no tree to shelter it from the scorching sun, or protect it from the merciless peltings of the bitter storms, and driving winds; while the health of the denizens of such habitations, especially in low regions, or in the vicinity of rivers and ponds, are more exposed to the inroads of diseases arising from miasmatic vapors, continually in exhalation, with *no trees* to inhale their pernicious qualities, and thereby render the atmosphere purer and more congenial to the demands of animal life.

WILLIAM BACON.

Richmond, Ms., March, 1847.

TO THE PUBLIC.

IN an article which I wrote, and which was published in the American Agriculturist for November, 1845, charges were made against Mr. Luther Tucker, then Recording Secretary of the N. Y. State Ag. Society, of using his official influence to promote his personal interests. These charges were founded upon what I then supposed to be good authority; but further investigation has convinced me that there was no foundation for them. I therefore fully and freely withdraw those charges against Mr. Tucker, and believe his statement in reply to these charges, published in the Cultivator for December, 1845, to be true.

A MEMBER.

LARD LAMPS.

I HAVE often alluded to, and even laid some stress upon, the use of lard lamps, in my enumeration of the evening comforts of a country gentleman's family. This is not only because the light afforded by them is more beautifully brilliant than any other, except gas, but that lard is always one of the staple products of the farm. The lamps used for burning it, do not differ materially from those for burning oil; and if the lard be made hot, and the lamp filled just before it is to be lighted, any kind of lamps will do as well. I have always been troubled to see a family straining their eyes, at work round a table, with one miserable, long, lumpy tallow candle, with as much wick as grease, shedding its feeble rays, just enough to make the "darkness visible;" while, in point of economy, it is cheaper to burn one lard lamp, than two such candles, to say nothing of the pleasure and advantage of seeing

what one is about. I speak from experience, for, during a whole winter of six months, I burned two lamps in my parlor, one in the kitchen, and one which burned all night, without buying an ounce of fat for the purpose; and that year, we had neither pork nor beef of our own killing, but depended entirely upon bought provisions.

To soften the beef and mutton suet, I mixed with it the fat of the poultry, carefully rendered: and all the grease from the kitchen, except that from smoked meat, was purified to answer the same purpose, by being washed twice or thrice in clean boiling water, and then strained through a cloth, to free it from salt, and other impurities. E. S. Eutawah.

PRESERVATION AND APPLICATION OF MANURES.—No. 3.

It may be laid down as a well established principle, that the alkalies, alkaline earths, and mineral elements, which enter into the composition of the food of man and beast, and thus serve to nourish the body, *are all given back to the soil*, in the form of solid and liquid excrements, except that portion which has served to increase the growth of the body, or rather solid parts of the body, for no parts of these elements which entered into the solid parts of animals, is, upon the death of such animals, restored to the soil. Thus no part of these elements need be lost to agriculture, except that which is contained in the bodies of the human species, which, of course, is buried in the grave. The *nitrogen* consumed in the food of men and animals, is also restored, with the exception above mentioned, but as this substance is easily converted into ammonial gas, more care is required to prevent its loss, by escaping in the form of ammonia.

From the principle laid down above, it is evident that if such care be used to preserve and restore to the soil everything which grew upon it, its fertility could not be diminished. Even the mineral elements, which are taken from the soil, in the form of hay, grain, and other provender, for man and beast, if consumed on the plantation, could with proper care, be nearly all restored to the soil. But it must be admitted, that although every possible care may be used, the whole of these elements cannot be restored. As already remarked, a portion of them, though very small, is buried in grass, a much larger portion is consumed at a distance, in our towns and cities. Some is exported to foreign countries, and some part of them is unavoidably lost on the plantation. But on the other hand, it must be recollected, that a kind Providence has provided a means of compensating these unavoidable losses. In the first place, there is constantly, though very slowly, progressing a disintegration of various rocks, which furnish new supplies of these mineral elements; and in the second place; as shown in my former number, a considerable supply of common salt, chloride of potassium, magnesia, &c., which by evaporation, and the winds, is carried over the whole earth. Of nitrogen, a considerable quantity is derived in the form of *ammonia*, from the atmosphere. These supplies were doubtless intended, by a wise Providence, to replace the *unavoidable losses* of the alkalies, and other mineral elements, which are so essential to the continued

fertility of soils. But it was not designed that they should be so abundant as to supercede the care and industry of man. And hence the necessity of constant vigilance and attention to give back to the soil the elements, which are essentially necessary to preserve its fertility. Horses, cattle, hogs, sheep, &c., which are pastured on fields, which are intended for future cultivation, give back to them immediately, in the form of solid and liquid excrements, all that they take from them. This is, therefore, a most economical and judicious application of manure. If the fields, thus pastured, should be well set with old clover, this mode of applying manure would be particularly valuable, for Liching shows, in his XVth letter, that with every 1000 pounds of carbon, we obtain from a field of wheat 21.5, oats 22.3, rye 15.2, and clover 44 pounds of nitrogen. Thus the clover, in consequence of its numerous leaves, must have derived from the atmosphere, in the form of *ammonia*, more than twice as much nitrogen as wheat or oats, and nearly three times as much as rye. It probably also imbibed, from the atmosphere, a similar proportion of the elements furnished by the evaporation of sea water. As all these elements are so much added to the soil, it must be considerably enriched by each successive crop of clover, fed off on the ground.

Corn is frequently cut up in the stalk, cured, and then hauled and fed on a field intended for future cultivation. Here all the elements contained in the fodder and corn are taken from the field on which the corn grew, and given to the soil upon which it is fed. Thus the latter is enriched at the expense of the former, by giving to it all the manure derived from another field. But as the field, upon which this grew, will, in turn, be sowed down in grass, and become the field upon which the corn will be fed, which is grown upon the field enriched as above, this is an economical application of manure. And if the fields should be kept a due proportion of time in grass, and especially, if kept in clover, their fertility would be procured, and may even be reinstated, after having been considerably exhausted, by making the grass crops occur twice or thrice (according to the degree of exhaustion) as often as the grain crops. But sometimes cut-up corn is fed upon woodland, or upon grass land, too broken for cultivation. This is a great want of economy in the application of manure, as it is wholly lost to the cultivated fields. This practice, if pursued to any extent, is well calculated to exhaust, instead of preserve, the fertility of soils.

A. BEATTY.

Prospect Hill, Ky.

CULTURE OF BARLEY.—The high price of this grain and the scarcity of good marketable samples the present season, should induce farmers to pay more attention to its culture. The best soil for it is a light, rich, loamy clay; and on this it produces most abundantly, and pays the cultivator as well, and often better, than any other crop grown. Much is said of the skinless barley, but, on the whole, we prefer the four and six-rowed kinds. On a proper soil, one and a half bushels is sufficient seed per acre. If desired, the land may be stocked down with grass at the time of sowing the barley.

LETTERS FROM THE SOUTH.—No. 5.

THE only plantation my limited time would permit me to visit in South Carolina, besides the one mentioned in No. 2, was that of Gov. Hammond. This extends from Silver Bluff, on the Savannah, some 3 or 4 miles back, and for a long distance on its banks. All that portion of it which is near the water is a fertile alluvial soil, and is frequently enriched by the overflow of the river; while much of that which is remote, passes into the high upland sand or gravel, which is characteristic of the great majority of land in the eastern portion of the State. Cultivation is confined almost exclusively to the former, and the best portions of the latter. The plantation lies some 16 miles below Augusta, and the road leading to it is varied, and much of it highly picturesque. For three miles it leads over a fertile alluvial plain, which, although high above the ordinary level of the river, is frequently overflowed after heavy and long continued rains. Much of it is enclosed and subjected to tillage; but the greater proportion of what I saw has the appearance of having been once reclaimed from the original forest, and notwithstanding its proximity to a large town, it is now lying in commons. Its luxuriant herbage is cropped by numerous herds of cattle and swine, which find a secure retreat from the oppressive sun and beating storms in the thickly tangled chaparrals formed by the evergreen and deciduous trees, over which the grape and other vines and the Cherokee rose clamber in wanton and fantastic profusion. One field enclosed a large flock of goats, the first of the kind, as *farm stock*, I had ever seen in this country. As the dairy is a minor object at the south, I conjectured they were reared principally for the shambles, and this opinion was confirmed by the little information I could gather on the subject.

There is a bridge at Augusta, connecting it with Hamburg on the opposite side, the lowest, I believe, on the Savannah. Steamboats of considerable size ascend to this point in an ordinary stage of water; but when low, only the smallest reach it, and even then with no little delay and trouble. The consequence is, that the railroad is enabled to underbid the boats for freight, and a large portion of it takes this route to Charleston; while the Central or Savannah road, running south and west of Augusta, draws off a portion of the produce and trade directly to the seaboard, which formerly went by the way of Augusta.

Georgia, like all the other older States, concentrated at an early day the earnest attention and excited the fondest hopes of some master spirits of the age. Among these may be mentioned the acute and metaphysical mind of Locke, the comprehensive and liberal philanthropy of Oglethorpe, and the irresistible eloquence and unswerving devotion of Whitfield. But the form of government designed for it by the philosopher, was too Utopian and speculative for a modern practical people, and was blown away like a gossamer by the first breath of the popular will; while the more solid and rational views of the philanthropist and the Christian, which were fully impressed upon her early institutions, will be felt for good to the latest generations.

Georgia was the southern frontier during the Re-

volution, and owing to the sparseness of her population and the peculiar position of her citizens, was by far the weakest of the old Thirteen, and she early fell an almost unresisting prey to the royal forces. Her population and improvement were comparatively rapid after the close of the war, and she now ranks amongst the foremost of the southern States, in products, wealth, and population. Thus much, *en passant*, for my first glimpse of Georgia.

Gov. Hammond has devoted much time to the investigations of modern scientific agriculture, and has carried into successful practice many of its best improvements. This is manifest in the varied crops which he cultivates, in his numerous huge piles of manure, and his extensive ditches, by means of which large bodies of fertile land have been reclaimed from an utterly worthless condition. The latter yield muck of great value for manure, or, when properly treated, make the most enduring and productive soils for crops where they lie. Like the peat and muck beds of the North, they require the decomposing effects of the atmosphere for some time after thorough drainage, to adapt them to the cultivation of miscellaneous crops; and from the occasional scantiness of these, we may fairly infer, that they are deficient in some of the essential requisites for the fullest development of profitable crops. The luxuriant growth of certain weeds or grasses, wherever the cultivated crop fails, shows conclusively the rich storehouse of numerous elements of vegetable life, and that the addition of the one or more that may be wanting, will not fail to ensure large returns of the useful products. The usual practice with these soils at the North, is to throw up piles of the top or superficial vegetable soil, and when thoroughly dry, burn it and scatter the ashes over the surface. To this is added barn-yard manure, and especially wood ashes; and when it approaches nearly to the character of peat, sand or gravel should also be applied. Lime and plaster of Paris, and sometimes salt, are also frequently valuable applications.

Gov. Hammond has introduced the practice of extensive marling, and with great benefit. He is thus enabled to increase his manure beds to any desirable extent, by a combination of vegetable matters with the muck and marl on his premises. The latter is found in great abundance on the bank washed by the Savannah, and is brought up in flat boats to his landing, and thence distributed wherever required. This is rich in lime, yielding by a recent analysis from 50 to 70 per cent. of carbonate of lime. Of course, with these materials in the hands of an intelligent and enterprising planter, there is little apprehension of *exhaustion* upon his lands—the great bane of southern agriculture. So far from this, there is evidence of rapid improvement in those fields subject to tillage, and Gov. H. is satisfied that his crops fully come up to the average yield of the Alabama and Mississippi plantations. Their greatest products go far beyond his; but they are subject to many casualties not here known, or felt only in a mitigated degree; and he is fully satisfied to cultivate his long tilled acres, and leave the clearing of new and remote lands to those who prefer excessive manual toil and priva-

tion to the exercise of intelligence, good judgment, and the application of some of the first and most obvious principles of modern improvements.

Several choice breeds of swine have been introduced on this plantation; but the preference is given to the Neapolitan, which he personally selected and brought from Italy, and their numbers have been increased by subsequent importations. These are provided with an admirable range of woods, shelter, pure water, and green and dry food in abundance; yet they are frequently subject to a mortality, common both at the South and West, the cause or causes of which have hitherto eluded discovery. This is a subject well deserving the investigation of skilful physiologists; and it is to be hoped that its importance will not fail to enlist some gifted mind, in what is still a desideratum in agriculture, viz:—a thorough knowledge of the habits, diseases, and proper treatment of swine.

Many of the best modern implements have been introduced here, and their operations have been found to economise labor and perfect the operations in a highly satisfactory manner. A grain and saw-mill, and the cotton-gins, are all propelled by water power, which is furnished by a small but permanent stream, on a convenient part of the grounds.

The cultivation of the fields was of the most perfect kind, both as to design and execution. The greatest regularity, and entire cleanliness from worthless vegetation, seemed to pervade all the cultivated part of the plantation. There were many of the miscellaneous products, too generally limited to a higher latitude, and the successful crops of turnips, ruta bagas, beets, southern rye, and other green crops for soiling, showed that attention and skill alone are wanting to insure the most satisfactory results. This is equally true of the soil and climate as far south as the Gulf of Mexico. If a system of culture embracing a much larger production of fodder (to be consumed on the premises) were introduced, the effect would be beneficially felt, not only in the much greater immediate aggregate value of the crops, but also in the gradual improvement of the soil, that would ultimately swell the amount of the present staples. This is obvious from the system now too generally practised, which consists in appropriating fields to one article alone, as of corn, cotton, tobacco, or the like; and when too much exhausted to make a remunerating crop, it is turned out for years, to recover by the slow operations of unassisted nature. The appropriation of a part of the fields to the growth of forage, which should be consumed upon the ground, would necessarily introduce a rotation, whose benefits would soon be felt in the gradual amelioration of the soil. If fewer acres would thus suffice to occupy the plantation force, the proprietor would probably find at the end of the season that his profit and loss account was more satisfactory. Dr. Bachman, of Charleston, informed me that one person had recently realized a larger net income from the product of green forage, on less than 100 acres of land in that vicinity; and although an equal amount of profit could not be expected remote from the large markets, yet it cannot be questioned that its more extensive production and consumption at home would be attended with the happiest effects.

There is a large natural growth of sumac on this plantation, and many others in this and the neighboring States; and growing in a soil and climate not unlike much of that in the Mediterranean (from which we import some of the best for the various purposes of dyeing, tanning, &c.), this may be found a good substitute for it. A brief summary of the manner of curing and packing for shipment, through the columns of the *Agriculturist* (which I find has a wide circulation among the intelligent planters in the south), might eventually lead to the export of large quantities to the northern markets, where it is now extensively used.^(a)

The elevated bottom lands which border the left bank of the river, and which here occupy an undivided field of two or three miles in extent, mostly covered with corn and cow-pea, present a beautiful appearance. Near their centre is Silver Bluff, thus named from the fancied existence of silver ore within it, when first settled by the Spaniards two centuries ago. There is an old brick house near the bank, whose antiquity is beyond tradition, which was used by the English during the Revolution, as the nucleus of their fort and barracks; and a large indenture from a cannon shot, shows conclusively that it has witnessed one of those hot encounters which everywhere marked the fierce and sanguinary contests of that eventful era. A double row of magnificent live or swamp oaks marks it as a site of ancient and cultivated occupancy.

There are many species of these oaks closely resembling each other in shape and general appearance. When fully grown, the trunk is from 3 to 5 feet in diameter, erect, and at a height of 15 to 20 feet branches into thick outspreading limbs, of great regularity; and presenting, at a little distance, the appearance of a beautifully proportioned dome. The closely interwoven branches, everywhere covered with small laurel-shaped evergreen leaves of the deepest verdure, complete the outlines of these species, which are without a rival in their peculiar features, among the indigenous forests of North America.

It was a source of sincere regret that I could not comply with the urgent invitation of my kind host and other friends along my route, and spend days instead of hours in witnessing the successful efforts which are now making by many of the most enlightened and spirited planters, in their laudable and patriotic efforts for the improvement of southern agriculture.

R. L. ALLEN.

New Orleans, Nov. 27th, 1846

The above should have appeared in the February number of our paper, as No. 3 of *Letters from the South*, but got misplaced.

(a) Our readers will find an excellent article on the culture of the Sumac, in vol. 2, page 239 of the *Agriculturist*. We here quote what relates to cutting and curing, and refer to the article for full information as to the rest.

Sumac should be cut or gathered in clear weather, and should be so spread on a floor as to dry rapidly; for if only a small part should ferment, the whole mass will be seriously injured in its marketable value. It should be fine ground when dry, and

packed in bags containing about one hundred and sixty pounds each, net weight. No rain or dew should be permitted to fall on it after cutting, for even the damp from the hold of a ship will injure its quality greatly.

MANAGEMENT OF HONEY-BEES.—No. 8.

IN order to prevent the bees from leaving their hives too freely, in the winter season, a free circulation of air is essential at the bottom. The bottom-board, however, cannot be allowed to remain as it does during the summer, open on all sides, for several reasons; one of which is, and sufficient, that the bees are liable to become chilled while resting upon it, and also to be blown off while in a state of torpor.

As soon as cold blustering weather sets in, generally in November, I take cotton wadding, and with a knife press it under the sides of my hives, all around, excepting in *front*. I do not press it beyond the inner surface of the hives, if the cotton retain its position permanently. On such side as is most exposed to cold winds, I leave a space of about an inch, as an air-hole; and through this aperture, a current of fresh air is constantly keeping the bees cool and healthy, without any desire to leave their habitation, unless the weather be very mild, and then in small numbers.

The state most congenial to the nature of the bee, in the winter season, is that of *hybernation*, or torpidity; and the bee, whose days are few at most, shortens its life by every day of activity from December to March; and every day of torpor is a lease of life extended. If then, the life of the bee is limited to one year, and the dormant state of the winter months is not brought into account, how very important it is to keep them as long as possible in that condition. When I commenced keeping bees, on the approach of winter I placed my hive in a very warm nook of my premises, where the rays of the sun roused the whole swarm into motion, and I congratulated myself on being able to afford my bees such unusually warm accommodations; but I soon found out my mistake, for my bees died so rapidly that I verily believe, had I not removed them to a cooler place, not one in ten would have survived till spring.

Spring Management.—The queen commences her spring laying on the approach of mild weather, in March or April. Even in February, should we have two or three weeks of warm weather, she may commence her spring laying. The indications of this are the activity of the bees in going abroad, and their return loaded with pellets of pollen upon their thighs. The latter is a sure indication. Should this be the case as early as in the month of February, in the latitude of New York, the bees will be placed in a very critical situation; for cold weather must, as a matter of course, intervene before the approach of settled mild weather. Under such circumstances, should the weather continue mild, the bees will consume more honey in a week than during a month of steady cold weather; and if their supply be not abundant, feeding in the general way as before described, should be resorted to. In any case, when spring opens prematurely, the greatest care is necessary, for the reason that if the bees

are on short allowance, their destruction is inevitable, unless they be fed. It is recommended by some experienced apiarians, to put a little salt, and also a little wine or ale, into their food, in the spring. As the experiment will cost little or nothing, it may be as well to try it. I have tried it, but whether my bees were invigorated thereby I cannot say; yet from the voracity with which they demolished it, I am sure that temperance restrictions have not, as yet, been enacted in their code of laws.

Those who may adopt my plan of filling in around the bottom-board with cotton, should close the aperture on the back of the hive, as soon as the laying season commences, as the ova are hatched by internal heat, generated by the bees themselves; and a current of cold air passing under them at this time would be detrimental. As soon as the weather becomes sufficiently warm to warrant it, say about the first of May, or later, the cotton may be wholly withdrawn. I use cotton solely from its convenience; anything else that will effectually close the side will do as well. The bottom-board might be drawn up in close contact with the hive, and a separate opening made for the bees to enter, but it is objectionable. The currents of air from behind could not be obtained so easily, and the bees require an easy outlet, not above the surface of the bottom-board, in order to remove their dead, and other sources of pollution. The moth-worm always shows itself (wherever any foothold has been obtained) in the spring. Its object then is to find a convenient place under cover to wind itself up in a cocoon, from whence issues the winged moth, ready to commence its depredations. At this season, the bees may be seen, some half dozen, tugging away at a worm, and when they get one on the edge of the bottom-board, two or three will fly away with it some feet from the hive. Now, when the bees have to ascend some one or two inches from the bottom to get out of their hives, it is almost impossible for them to drag these worms out; but when the opening is flush with the bottom, and extending the whole side, these worms fall of their own gravity frequently, if not the bees soon clear them off. These worms often show themselves in hives in the spring, in small numbers, where no injury has been sustained by the stock, and they should not be regarded as ominous of serious evil.

Should the bees be placed in any situation cooler than that which is intended for them in the summer, such as on the north side of some building (which is a good plan in a mild winter), they should be kept in that position till permanent mild weather; but care should be taken not to leave them too long, as their spring increase might be greatly retarded thereby. The great object of every one should, at this season, be to get early swarms. One swarm in May is worth two in June.

From the 10th of May to the 10th of June, is the legitimate season of swarming in this vicinity, and it is the season of the greatest interest to the apiarian. Who has not watched his bees during this period with the greatest solicitude? Who has not felt a purer joy on beholding the heavens darkened by some powerful swarm, than if he had found a treasure? With what interest the eye follows the revolving cloud! Presently, a nucleus is formed

around some slender branch, which soon groans beneath the load that bends it down—then comes the new hive—a sudden shake of the branch—the animated mass falls alongside—they enter—the work is done!

T. B. MINER.

Ravenswood, L. I., February, 1847.

THE HORSE.—No. 4.

WE now take up the consideration of those parts of the frame of the horse which constitute his moving force, and give him his power. Although not in all instances determining his salable value, yet, in certain kinds of horses, these parts entirely do so. The muscles of the shoulders, back, quarters, and legs, are the means of motion, and these may all be perfect for this purpose, and the horse superior in his paces, and yet be very plain. Great moving power will not give beauty, for beauty and power are not necessarily connected, though beauty may mould the muscles to admirable figure and yet not detract from power. The horse for the coach, for show, parade, must possess style and gaiety; the trotter and racer need not; the sportsman only asks great muscular power to give rapid movement, and style and airiness, or lofty action, are nothing to him—the beautiful garran is worthless—the plain trotter, or racer, that will outpace and outlast competitors, almost priceless. If to great power, the horse add beauty, his price will be commensurate to his double excellence. We treat of the shoulder first.

THE SHOULDER.

The shoulder-blade lies on the side of the chest in front, and is narrow and roundish at its lower, and flat and broad at its upper end. It is divided into two parts on its outer surface by a projecting ridge running nearly its whole length. This ridge gives additional strength, while it adds but little weight, and affords increased surface for the attachment of muscles. The upper part, for the reason that no muscles are attached to it, is mere cartilage, although in old horses it sometimes becomes bone. The point of the shoulder lies opposite the first and second ribs; the rear part of it extends as far back as the seventh rib, and of course the shoulder is oblique along the chest, running backward and upward.

The shoulder-blade has no bony union with the chest, but is connected by muscle alone. Had it been otherwise, the vital parts, the heart and lungs, must have had a different construction to withstand the shocks to which they would be subjected; and indeed, even the bones themselves would not be of sufficient strength to remain unbroken. There is one muscle, called the great saw-shaped muscle, with very remarkable tendinous fibres, and of immense strength, attached to the chest and to the extensive smooth inner surface of the shoulder-blade, and which, assisted by the muscles of the breast, supports the body, and sustains the shock of the greatest leap or most rapid motion. The muscles within the shoulder-blade act as powerful and safe springs. They yield, as far as necessary, to the force impressed on them, and by their gradual yielding destroy the violence of the shock of motion, and by their elastic power immediately regain the natural position. The shoulder blade and

the lower bone of the shoulder (*e* and *m*, fig. 11), are not connected together in a straight line, but form an angle with each other, and in the manner that the bones of the quarter and thigh are joined (same cut). This angular union of the bones of the shoulder and the quarter is similar to the arrangement of carriage springs, and gives the same ease of motion, and freedom from jolting. By this adjustment of the bones of the shoulder, and their muscular connexion with the chest, the shock arising from the weight of the body being thrown on the fore legs, is lessened or entirely broken.

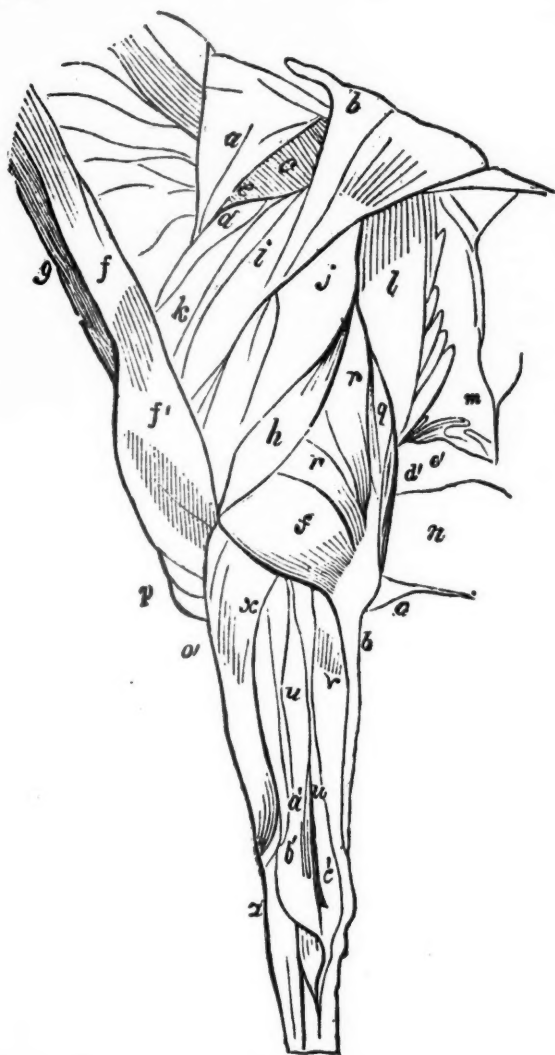
The obliquity which this angularity of the junction of the bones gives, serves a variety of purposes; one is to give the power of extension, and the greater the extension the greater the ground covered, and the faster the pace. Hence it is, that for rapid motion, a great obliquity is necessary; another is, that it places the fore legs further forward and secures a better balance, rendering the horse less liable to stumble. But these we do not propose to discuss here, as it will be more proper at another stage of the subject. This obliquity, as it lengthens the blade, furnishes more space for the attachment of muscles, and this gives greater power. Had the shoulder-blade been upright, it must have been shorter, and there would have been less room for muscular attachment, and of course less muscular power. The muscles of the shoulder extend and bend the leg in progression, and their power will be the greater if they be greater themselves; the obliquity of the shoulder secures this greater muscular means. Not only is greater power obtained, but greater security in the union of the shoulder-blade to the chest, by reason of the greater muscular attachment.

At the union of the shoulder-blade with the lower bone of the shoulder, there is a bony projection, called the point of the shoulder; it is round and blunted. The fig. 11, in February number, will show it, at, in front of, and above *m*. The neck of the shoulder-blade there forms a shallow cavity, into which the head of the lower bone is inserted. This cavity is shallow to allow of extensive motion. As the bones are those of motion peculiarly, and their motion necessarily connected with that of each other, a shallow cavity also lessens, or perhaps entirely prevents, dislocation. A ligament, extending round the heads of both bones, confines them securely in their joint together. If this joint should be dislocated, it would be impossible to reduce or put it in, as the ligament and the muscles of both bones are so very strong.

The Muscles of the Shoulder.—We proceed now to the discussion of the muscles of the shoulder and fore leg. All the muscles are in pairs, on each side of the horse, and what is said of one applies to both.

At the top of the shoulder there is a muscle (called by anatomists *trapezius*, and seen at *a* and *b* in fig. 26), which is attached to the projecting bones, which form the withers. Its union with these bones is very broad and strong. It also is united to the ligament and the muscular expansions of the neck (called *fasciæ*). It grows narrow as it proceeds downward, and is inserted on to a tubercle (or point of fastening) on the ridge of the shoulder-

blade, where it ends almost in a point. It occupies the space between the withers and the upper part of the shoulder-blade. It is large and strong in proportion to the height of the withers and the slanting of the shoulder. It supports the shoulder-blade, raises it, and draws it back. Attached to the immovable withers, it moves the movable bone of the shoulder to accomplish motion. As it is so important for motion it should be large, and hence the necessity for high withers and obliquity of the shoulder-blade, that it may be large. The withers should have some fleshiness about them, to give this fullness of muscle. Otherwise, the high wither and oblique shoulder will want their proper muscular force to secure proper motion of the shoulder blade.



MUSCLES OF THE OUTSIDE OF THE SHOULDER.
FIG. 25.

At *c*, fig. 25, is a portion of the muscle called the *shoulder raiser*. Descending from the head, it attaches itself to the first four or upper bones of the neck, and to the ligament of the neck. It is inserted into the muscles of the shoulder, and of the shoulder point (at *f'*, fig. 25), and ends by attaching itself on to the ridge and the body of the shoulder-blade. Its uses and powers are immense. It raises and draws forward the shoulder and the arm of the leg in motion, and when the horse is standing turns

the head and neck, if the muscle on one side only is used, and lowering the head and neck if those of both sides be used, as before mentioned in No. 2 of our series.

At *d*, fig. 25, is a portion of the great saw-shaped muscle before mentioned. It lies between the shoulder and the side of the chest. It is an external muscle, on the lower part of the neck, and there constitutes the bulk of the neck. It disappears from its outside position, and passes in between the shoulder-blade and the chest. It is deeply seated, and springs from the fourth, fifth, sixth, and seventh bones of the neck, and is attached to the first eight ribs on the inner side and on to the shoulder-blade on its outer side. Its size is immense, as it needs be, for it holds the shoulder to the chest and supports the body on the legs in front. This muscle has still another use. Like the intercostal muscles, it assists in breathing, as it acts powerfully to expand the chest.

At *e*, fig. 25, is seen a portion of the *splint-like* muscle, described at page 76 of the present volume. Its office is to raise the head and neck.

At *f*, *f'*, lies a muscle (sometimes called a part of the shoulder raiser), which starts from the tubercle (or nipple-shaped elevation) of the bones of the temple. It runs down the fore and under part of the neck, is inserted on to the upper and middle part of the lower bone of the shoulder, and from thence is continued down to the arm. Its purpose is double; when the horse stands it bends the head; when he moves it raises and brings forward the arm of the leg. As the speed in motion is greater or less, so is its action.

In fig. 25, *g* represents a part of the muscle extending from the lower jaw to the fore part of the chest. It is described at page 76, second column. It bends the head and lowers it. *k*, is the principal part of this muscle, extending from the shoulder-blade to the lower bone of the shoulder. It serves to draw the lower bone back and upward towards the shoulder-blade, and assists to bend the leg. Great action is required of it, and therefore it is very tendinous. Its position gives it great mechanical advantage, and when the shoulder is quite slanting it is still more powerful.

The muscle at *i*, fig. 25, in front of the ridge of the shoulder-blade, is situated on the outer and front part of the shoulder. It is attached to the lower bone of the shoulder also, and to a bony ridge extending from it to the ligament of the shoulder joint. Its office is to bring forward, bend, and give an outward motion to the lower bone of the shoulder.

The muscle *j*, fig. 25, situated behind the ridge of the shoulder-blade, occupies the space there. It is inserted into the outer and upper head of the lower bone of the shoulder. It draws this bone outward and upward.

At *h*, fig. 25, lies the *small breast muscle*. It is common to the breast and shoulder-blade. It arises from the breast bone and extends to the covering of the shoulder joint, and the muscles of the shoulder. It has an action in common with the great breast muscle.

The *great breast muscle* is situated at *n*. Its office is to draw the lower part of the shoulder-blade and the head or upper part of the lower shoulder bone,

backward, to give to both these bones a more upright position. Its action is in common with and for the same purpose as the *small breast muscle*.

q, shows the tendon of the *long extending muscle* of the arm. It is a very important one; it reaches from the upper angle and the back edge of the shoulder-blade to the point of the elbow and the inside of the arm. Its office is to extend the leg.

At *r*, *r*, *s*, are three divisions of another *extending muscle*, whose office is the same as the *long extending* one. It is called the *short extensor*. It springs from the shoulder-blade and the lower bone of the shoulder, and attaches itself to the point of the elbow by a very strong tendon. The upper *r* goes from the shoulder-blade to the point of the elbow; the lower *r* goes from the upper part of the lower bone of the shoulder to the elbow; and *s* goes from the inner part of the lower shoulder bone to the elbow. Lower *r*, and *s*, are very strong and short muscles. They are very powerful agents in extending the leg.

y, presents the *external muscle* for bending the arm. It arises from the lower shoulder bone and the inner and back part of the neck, passes across the lower shoulder bone obliquely, and round it, and inserts itself into the inner and upper side of the bone of the arm.

The Lower Bone of the Shoulder.—This bone makes a joint with the shoulder-blade, and runs downward and backward from the point (which is at the joint) of the shoulder. It is a strong one; it has a large round head, inserted into the shallow cavity of the shoulder-blade. There is no joint in the body which allows more varied and extensive motion than this. The lower bone has several branches or elevations (tubercles) on to which muscles attach themselves; it has at its lower end two heads, between which the upper end of the large bone of the arm is inserted, making the elbow joint. This is a joint which must be strong and secure, and hence its peculiar formation. It only admits of backward and forward movement in a straight line, without side motion. It plays backward and forward in the bending and extension of the arm. Behind the elbow joint these two heads receive the elbow deep between them, to give more extensive action to the arm. The lower shoulder bone should be short; indeed, can hardly be too short. The shorter it is the further forward is the leg. When it is too long it is nearer the horizontal line, and the leg is thrown too far under the horse, and the shoulder-blade is made too upright. In consequence the whole forehand is too heavy.

We have described all the muscles of the shoulder together, as the shoulder is commonly spoken of as a whole, and as the muscles are so intimately connected.

THE MARL DISTRICT OF VIRGINIA.

THE Marl District of Virginia comprises that portion of the State which lies between the Chesapeake Bay and the falls of the rivers that empty into it; but in many places it does not extend quite to either extreme. Nor is it confined to Virginia, but is found in all of that strip of country between the Atlantic Ocean and the falls of the rivers from the Potomac to the Gulf of Mexico. I shall confine my remarks to that section which lies in Virginia.

It is found in the sides and bottoms of ravines, with which the land near the rivers, creeks, and branches is much broken. It is also found in the beds of *branches*, which are better known to your northern readers as *brooks*. In some places, it is found almost at the surface, and in others, at the depth of several feet, though rarely at a greater depth than four feet, except on the level and unbroken land, where it generally lies at least fifteen feet below the surface. It is composed of marine shells, of a great variety of shape and form, intermingled with silica, and sometimes slight traces of green sand and gypsum. The quality of the marl is governed by the kind and quantity of shells. Some do not readily decompose on exposure to the weather, and others entirely decompose on exposure to one or two rains; and those kinds which readily decompose, are of course the most valuable, and fortunately the most plenty. I think the kind known to geologists as the *Chama Congregata*, are the principal ones, and comprise more than one-half of the marls of Virginia. The shells are nearly pure carbonate of lime; and the marl, upon analysis, furnishes from thirty to eighty per cent. of that substance, varying with the number of shells it contains. It is only within a few years that these marls have been used to any extent as fertilizers of the soil. A few individuals made experiments many years ago, with no apparent benefit, and it was given up as worthless, until Mr. Edmund Ruffin, of Prince George, commenced his experiments.

Mr. Ruffin had a large quantity of land, which by long and severe cropping had become like the rest of Eastern Virginia, so poor that it hardly paid in its returns the cost of cultivation. After many fruitless endeavors to sell his plantation, and remove to the fertile lands of the southwest, he turned his attention to the rich marl deposits with which his land abounded. Knowing that lime was one of the principal ingredients in the marls, he also knew that lime was essential to the growth of all kinds of agricultural productions, and its application was generally recommended by the best scientific and practical farmers on both sides of the Atlantic; he further ascertained by analysis, that his soil was almost entirely destitute of calcareous matter. All of these facts satisfied him that the marl was valuable, and would prove beneficial. He applied it in different quantities and on different soils, on nearly every one of which it proved highly beneficial. He continued its use some years very successfully. In the meantime, he procured and analysed soils from different portions of the state, and he found them almost entirely destitute of calcareous matter; and he found, by experiment and inquiry, among his brother farmers, that with the exception of the rich river bottoms, the land upon some of the rivers where the Indians had for centuries been depositing oyster shells, that no permanent improvement could be made without the aid of calcareous matter. Clover, which before would hardly grow at all, without a heavy dressing of putrescent manures, grew luxuriantly upon the application of marl; and one or two crops of clover fallowed in, not only produced fine crops of wheat, but materially altered the appearance of the soil, changing it from a light-colored or greyish, to a dark brown, or chocolate color; it also made a perma-

ment change and improvement in the soil, which could be made by no other means.

Mr. Ruffin has published a work on calcareous manures, which has been of incalculable benefit to Eastern Virginia, and might be profitably read by every farmer in the United States. He there not only proves the utility and benefits of lime in Virginia, but everywhere else, where it does not already exist in the soil. He gives a more satisfactory reason why gypsum does not act on so large a portion of our Atlantic coast, than I have ever seen elsewhere. He applies his remarks particularly to Virginia, but they are, I think, as applicable in other places. He calls all the soils of Eastern Virginia acid, with the exception of the river bottoms; those he calls neutral soils. He calls these soils acid, because there is generally a strong disposition to produce sorrel. He says, that after cutting down the young pines that grow up in old fields, and letting them remain until the leaves rot, where each pine lies, will be found a vigorous growth of sorrel, which will continue to grow on the land until lime is applied. I here make a short extract from his work, which will give his reasons why those lands must be limed, before gypsum will be beneficial.

"If the vegetable acid, which I suppose to exist in what I have called acid soils, is not the oxalic (which is the particular acid in sorrel), at least every vegetable acid being composed of different proportions of the same elements may easily change to any other, and all to the oxalic acid. This, of all bodies known by chemists, has the strongest attraction for lime, and will take it from any other acid which was before combined with it, and for that purpose the oxalic acid will let go any other earth or metal which it has before held in combination. Let us, then, observe what would be the effect of the known chemical action of these substances on their meeting in soils. If oxalic acid was produced in any soil, its immediate effect would be to unite with its proper proportion of lime, if enough was in the soil in any combination whatever. If the lime was in such small quantity as to leave an excess of oxalic acid, that excess would seize on the other substances in the soil in the order of their mutual attractive force, and one or more of such substances are always present, as magnesia, or more certainly iron and alumina. The soil, then, would not only contain some proportion of the *oxalate of lime*, but also the *oxalate* of either one or more of the other substances named. Let us suppose gypsum to be applied to this soil. This substance (sulphate of lime) is composed of both sulphuric acid and lime. It is applied in a finely pulverized state, and in quantities from a half to two bushels per acre, generally not more than one bushel. As soon as the earth is made wet enough for any chemical decomposition to take place, the oxalic acid must let go its *base* of iron or alumina, and seize upon, and combine with, the lime that formed an ingredient of the gypsum. The sulphuric acid, left free, will combine with the iron or the alumina of the soil forming copperas and alum in the other. The gypsum no longer exists."

Do not the same reasons exist in New Jersey and on Long Island? Sorrel most certainly grows; but is there an absence of lime? My own opinion *without an analysis* is, that it exists in but small

proportions, if at all. Lime has been used considerably in New Jersey, but to a very limited extent on Long Island. If any of the New Jersey or Long Island farmers have not used gypsum since they have limed their land, they had better make the experiment, and communicate the result through your or some other Agricultural Journal. There are hundreds of farmers in Eastern Virginia, whose experience and observation fully confirm Mr. Ruffin's theory. With the aid of the marl and clover, this section of Virginia will become one of the richest and most productive agricultural districts in the country. The soil, though generally light, stands on a retentive clay subsoil, which enables it to retain near the surface all the manure that is applied. Connected with these advantages, it has natural facilities for transportation superior to any section of country of equal size in the United States. There is hardly any portion of it that is more than ten miles to navigation; yet with all these advantages, this region, until recently, has been entirely overlooked and neglected. One reason of this is, the unhealthiness of the climate in the latter part of summer and the fall until frosts come.

But another equally good reason is, that the system of farming has been such that no land could fail to be exhausted. Cropped until it could no longer pay the expense of cultivation, and then turned out to grow up in pine; and after it has remained in that condition until it is supposed to have recovered a portion of its lost fertility, it is again cleared and brought into cultivation. But the spirit of improvement has begun to have its effects, and a regular system of farming has been adopted by the most intelligent portion of the farmers.

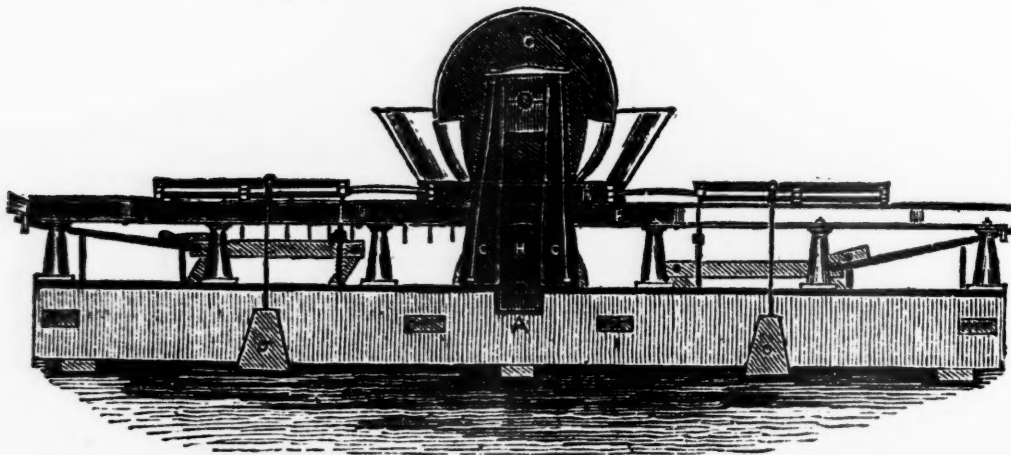
There are different systems of cultivation, but that known as the *three field*, is most commonly adopted. This is as follows: 1st, corn; 2d, wheat, taking the corn off soon enough to sow in the fall; 3d, clover sown on the wheat in the spring, and grazed as little as possible, and followed in the fall and reseeded in the spring for corn; so that two grain crops are taken from the land in three years; and if the land is marled and attention paid to making manure, as hauling into the farm pens pine litter, rich earth from the corners of fences, and occasionally a little marl scattered over, some farms will improve at that. Where the land is not stiff and rich enough to produce wheat, oats are frequently substituted. But in my opinion, the radical error of their system of farming, is the neglect of grass cultivation, as meadows and pasture fields, and the neglect of cattle. The general opinion among the farmers of that region is, that grasses, such as timothy, or herds-grass, will not grow well, and cattle are not profitable. The idea that grasses will not grow is all conjecture; they can be grown there as well as at the north. I have never known an experiment properly tried and fail; and the fact that clover succeeds, is evidence to me that other grasses can be successfully cultivated. Any amount of proof of this can be obtained if desired. The old Dutch maxim that grass makes cattle, cattle makes manure, and manure makes grain, is entirely lost sight of by those farmers. Some of them, however, are finding this out and reforming. There is a strong desire in many portions of this region to introduce northern farmers. Land is cheap—from \$3

to \$10 and \$15 per acre, according to its location. But the unhealthiness of the climate is a serious objection, unless he goes there with capital enough so that he can afford to leave in the sickly season. I believe that many of your northern farmers, with ten thousand dollars well invested in land upon some of those rivers, with their systems, energy, and industry, would, after spending all the sickly seasons away, have more money left at the end of the year than they would with the same amount invested at the north, at the present price of land there. The leaving his farm some two or three months in a year to the management of an overseer, may not at first be favorably received by your northern man, but when he considers that his

wheat is harvested and probably threshed, and his corn crop is laid by and made before the sickly season commences, he will see that his services can be spared at that time as well as at any other in the year; and furthermore, that many of the best cultivated farms in Virginia are thus deserted by their owners every year. The health of this region will undoubtedly improve as the land is cleared and marled, marshes drained, &c., and perhaps your readers are not aware that not more than one-third of this whole region is cleared.

I fear that I have taxed you and your readers' patience with this long and imperfect article; but I feel that I have hardly done justice to the subject, even with the space I have occupied. L.

CULBERTSON'S DRY CLAY BRICK MACHINE.



DRY CLAY BRICK PRESS.—FIG. 26

VARIOUS efforts have been made in this and other countries to apply machinery to the manufacture of bricks, for the purpose not only of economizing time and labor in the process, but to secure an exactness of shape and edge not attainable in moulding by hand. In these experiments the practicability of making bricks by compressing clay in its crude state appears to have been fully tested by a machine recently patented by Mr. T. Culbertson, and now in operation in Cincinnati. This machine is driven

by a steam-engine not exceeding six horse power, attended by 12 to 15 men, according to the difficulty of digging the clay, who can make and stack in the kiln, ready for burning, from the undug clay, 3,000 bricks per hour, at a cost of 50 to 60 cents a thousand. These bricks may be burnt with wood, or by hard or soft coal with a blower attached to the engine, which, together with one of the machines, will be put in operation in or near this city early in May.

NEW YORK FARMERS' CLUB.

Soiling of Cattle.—The most important subject discussed by this club since our last report was on the soiling of cattle.

Dr. H. A. Field read an elaborate paper on the subject, after which he remarked that he felt incompetent to express himself as he wished. He said that the cows on his farm were kept in warm stables during the winter, where, by attention to this circumstance, and giving them proper food, they afforded a continual supply of milk. He recommended the parsnip for early spring feeding, which he said has great advantage over other root-crops, as it is not necessary to harvest it in the fall, for it is not destroyed by exposure to the frost, but is rather improved in being left all winter in the ground. He said, as the question of soiling, in

reference to its attendant expenses and profits, in different parts of the country, is imperfectly understood, and as it is necessary that the subject should be systematically pursued, he would offer the following resolution:—

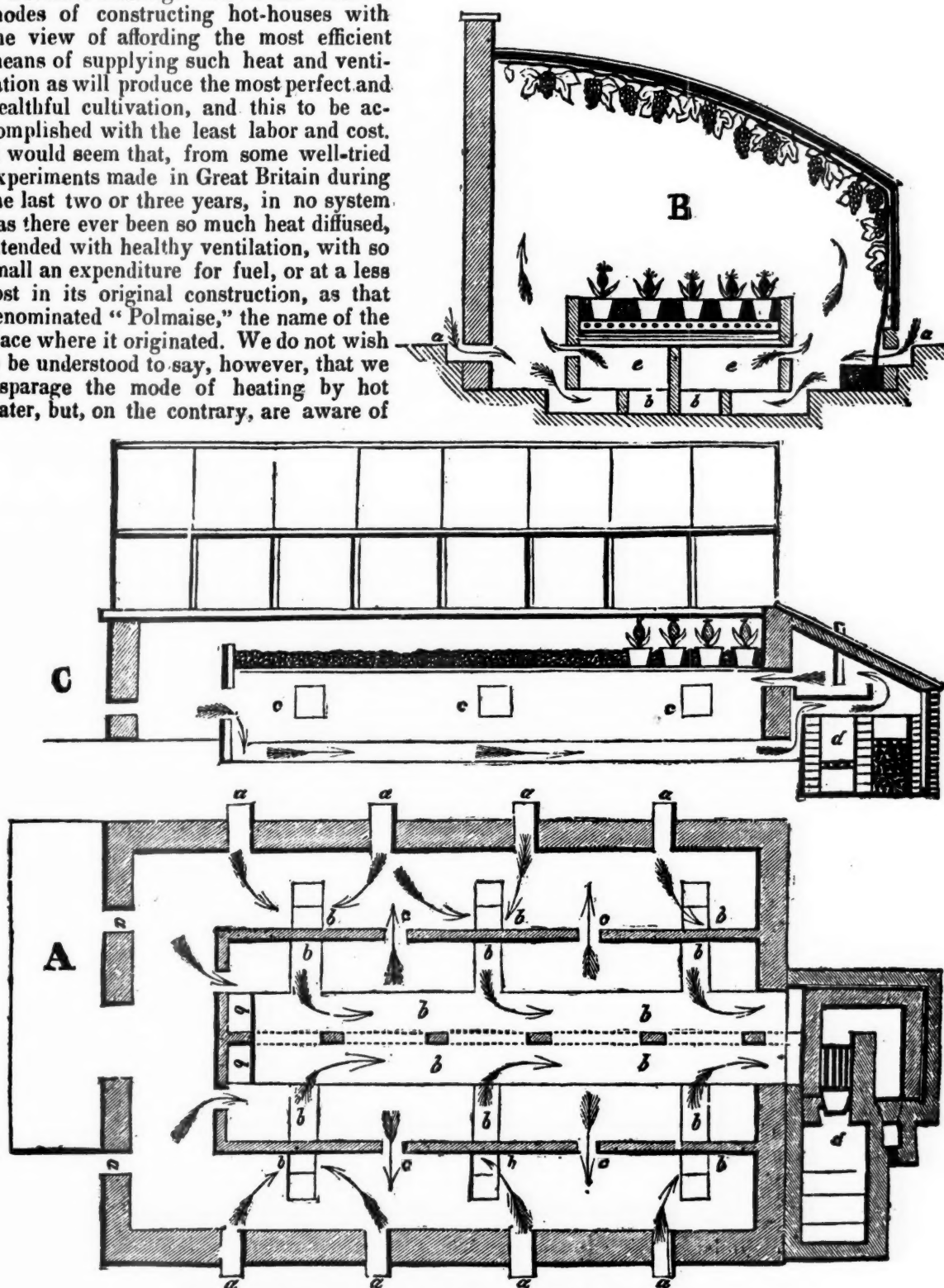
Resolved, That a Committee be appointed by the club for the purpose of making comparative estimates of the expenses and profits of soiling, or stall-feeding cows in the southern district of New York—with the modes of treatment, nature and application of food employed,—to report at the National Convention of Farmers, Gardeners, &c., to be held in this city, at the next annual Fair of the American Institute.

The Resolution was *unanimously adopted*.

The Committee was appointed by the Chairman, viz:—R. L. Pell, Dr. H. A. Field, Dr. R. T. Underhill, Judge Van Wyck, and J. E. Hyde.

CONSTRUCTION OF HOT-HOUSES.—No. 2.

Polmaise Heating.—There are various modes of constructing hot-houses with the view of affording the most efficient means of supplying such heat and ventilation as will produce the most perfect and healthful cultivation, and this to be accomplished with the least labor and cost. It would seem that, from some well-tried experiments made in Great Britain during the last two or three years, in no system has there ever been so much heat diffused, attended with healthy ventilation, with so small an expenditure for fuel, or at a less cost in its original construction, as that denominated "Polmaise," the name of the place where it originated. We do not wish to be understood to say, however, that we disparage the mode of heating by hot water, but, on the contrary, are aware of



POLMAISE PLAN—AND ELEVATION OF A HOT-HOUSE.—FIG. 27.

its excellence and advantages; and we think it would be very unwise in any one having a good hot-water apparatus to pull it down for the sake of substituting the Polmaise. "Let well enough alone," is an excellent maxim; but do not allow it always to prevent striving to do better.

Description.—The plan of the house, A, shows the cold-air entrances, cold-air drains, hot-air cham-

ber, and entrances for air into the house, with furnace, chimney, and direction of currents; a, a, cold-air entrances, covered at pleasure with horizontal lids outside of the house (these entrances, in cold weather, are generally kept closed, being only occasionally opened); b, b, cold-air drains, covered at pleasure with sliding covers, made of slate; c, c, entrances for hot air into the house, which may

likewise be covered at pleasure with doors sliding along the face of the pit; *d*, the furnace.

The section, B, denotes the bottom-heat chamber, cold-air drains, and direction of the currents; *a*, the entrance for cold air; *b*, cold-air drains; *c*, bottom-heat chamber.

The longitudinal section of the house, C, shows the hot-air chamber, furnace, built of Stourbridge bricks and surrounded with two inches of sand, and covered over with an iron plate in three widths, from three-fourths to an inch thick, with a rim projecting from its under edge all round to fall into the groove in the top cornice of the brick work, which is to be filled with sand; the cistern is made of iron, four inches deep, in two divisions, and fed through a pipe from above; the roof has a cavity to be filled with saw-dust, to prevent the escape of heat; *c*, entrance for hot-air; *d*, furnace.

CULTURE OF POTATOES.

In looking over the *Agriculturist* for February, I noticed your article entitled "Farmers, send in your Facts." Not being much of a farmer, I should certainly not have written a word, but you say, write be it ever so homely. Although I have no large crops to boast of, not having measured them, and not liking to guess, I have concluded to send my experience in planting potatoes, and inform you of their escape from the disease—with the exception of one variety—so prevalent in our country.

In the year 1845, the ground, which was sward, was turned over and planted with corn, excepting four rods square, reserved for experimenting on the coming summer. I had read several accounts that potatoes planted early would not be diseased. I accordingly, as quick as the land would possibly do, commenced operations, plowing and harrowing thoroughly. The ground was a light loamy soil containing a little more than an acre, on which were spread broadcast, twenty-five cart-bucksful of stable manure, evenly over the surface. The land was then struck into ridges, and about the first of April planted with Meshannocks, English-whites, blue-eyes, Sandy-lakes, and Scotch-greys; the Meshannocks occupying the turf ground. The potatoes were cut through the centre, and one half placed in the hill with a table spoonful of plaster. The mode of cultivation was exactly alike. The potatoes were planted two and a half feet each way, plowed and hoed twice, nothing more done to them till digging. The Meshannocks were badly affected with the rot, not more than one-quarter of them were sound. In some hills there was not a sound one in them, in others there were half a dozen in them. The other varieties were not affected at all; they were most all of large size. In another lot I planted in May, they were most all decayed. These were planted on meadow land, consisting of a dark, damp soil, turned over the fall before; it was treated in the same manner, and planted with the same kind of potatoes as the former.

Now, Mr. Editor, can you tell me why one variety should be so affected and the others not? I have come to the conclusion that if we raise potatoes without disease, we must plant them early and on dry, warm soil, and not manure too highly. Have I come to the right conclusions? (a) I do,

not believe it is an insect, for, if it were, why would not one part be affected as another. I think it is more in the land than anything else.

A FARMINGTON FARMER.

(a) So far as avoiding the use of rich putrescent manures is concerned in the culture of potatoes, our correspondent is right; but as to the other matters, it would be impossible for us to give any satisfactory opinion at present, not knowing the state of the seed potatoes, whether healthy or diseased; the quality of the soil; and other circumstances necessary to assist our judgment.

ORIGIN AND APPLICATION OF GUANO IN PERU.

Guano (or, according to the more correct orthography, *Huanu*) is formed of the excrements of different kinds of marine birds, as mews, divers, sheerbeaks, &c., the immense flocks of which, as they fly along the coast of Peru, appear like clouds. When their vast numbers, their extraordinary voracity, and the facility with which they procure their food, are considered, one cannot be surprised at the magnitude of the beds of Guano, which have resulted from the uninterrupted accumulation during many thousands of years. It is found on all the islands, and on most of the uninhabited promontories of the west coast of South America, especially in those parts within the tropics. It occurs in enormous layers of from 35 to 40 feet thick. The upper strata are of a greyish-brown color, which, lower down, become darker. In the lower strata, the color is a rusty red, as if tinged by oxide of iron. The Guano becomes progressively more and more solid from the surface downwards, a circumstance naturally accounted for by the gradual deposit of the strata, and the evaporation of the fluid particles.

During the first year of the deposit, the strata are white, and it is then called *Guano Blanco*. In the opinion of the Peruvian cultivators, this is the most efficacious kind. It is found in the Punta de Hormillos, on the islands of Islay, Jesus, Margarita, &c.

Much has recently been written on the employment and utility of Guano; but the manner in which it is applied as manure, in Peru, seems to be but little known. The Peruvians use it chiefly in the cultivation of maize and potatoes. A few weeks after the seeds begin to shoot, a little hollow is dug round each root, and is filled up with Guano, which is afterwards covered with a layer of earth. After the lapse of twelve or fourteen hours, the whole field is laid under water, and is left in that state for some hours. Of the *Guano Blanco*, a less quantity suffices, and the field must be more speedily and abundantly watered, otherwise the roots would be destroyed. The effect of this manure is incredibly rapid. In a few days the growth of a plant is doubled. If the manure is repeated a second time, but in smaller quantity, a rich harvest is certain. At least the produce will be three fold that which would have been obtained from the unmanured soil.—Translated from Dr. Tschudi's late *Travels in Peru*.

MOUNT AIRY AGRICULTURAL COLLEGE.

THE undersigned having for a series of years devoted himself to the pursuit and practice of agriculture, and having with deep concern regarded its condition as a profession or calling, could not but perceive that there was wanting, something indispensable to give character and energy to an occupation acknowledged to be the most useful, and embracing in its extended range the most numerous class of the people in these United States. He has therefore been long convinced that the great desideratum to be supplied, is an education, commensurate with the high destinies of the landed interest—a training in rural economy pending the progress of the student in literature, so that when he shall graduate, he may not only have achieved the usual attainments acquired in mere literary institutions, but exhibit a thorough and well grounded knowledge of practical and theoretical agriculture and horticulture, and possess in a superior degree, the presumable addition of good health and habits; being thereby the better fitted to enter upon the general duties of life, or into any profession as well as that of agriculture. This presumed felicitous condition of the graduate needs no demonstration, for it must be admitted, that the training and exercises of a properly conducted agricultural college, will be naturally promotive of the priceless blessings of robust health, industrious habits, and a well regulated mind.

In the eastern and middle States many laudable efforts of late years have been made to improve and elevate the position of the farmer, but in the main all have proved futile. In vain were clubs and societies formed; these could but invoke or inspire others to associate, and spend, as they did, a little time and money in the cause; for all must now perceive that education is the one thing needful, without which all efforts are unavailing, in furtherance of the great object in view. In vain did capitalists, charmed with the rural, and desirous of setting an example, purchase farms and quit the cities; for they soon returned in disappointment, if not in disgust. Why? Because they had not been fitted by education for the pursuits of agriculture. They had to depend on hirelings, and no money could procure, for it is not procurable, the intelligence and skill adequate to the superintendence of the yards, stables, and stock—the soils and manures—the crops and cropping. Every planter or owner of a farm, should therefore be able to direct and instruct in all the leading interests and operations on his estate, for it is as much as he can hope, or under the circumstance expect, if his laborers carry out his orders in the detail.

To educate youth in the leading branches of popular learning as taught in our colleges, with the addition of practical and theoretical agriculture and horticulture, with their attendant sciences, the undersigned contemplates founding an agricultural college at Mount Airy, his residence, eight miles from the city of Philadelphia, a site favorably known for its healthiness and beauty, and as having, until recently, been for many years a seat of learning, and now, in gardens, grounds, and buildings, admirably suited for the purpose.

Students will be admitted at ten years old and upwards. The younger pupils in the elementary branches of the scholastic department will receive special and particular attention. The more advanced in years and learning, on entering, will be classed according to their qualifications, and all will be carried forward as rapidly and understandingly as practicable, to a perfect and thorough completion. In the agricultural department, a similar classification will be made in view of the age and capacity of the students, and their exercises proportioned accordingly. Each little boy will have his budding and pruning knife, his miniature rake and hoe, and in fine weather will daily repair to the gardens and nurseries, and there be taught the nomenclature of plants, flowers, &c., their culture, habits, and properties,

and the necessary manipulations of producing; after an hour spent in this healthful recreation, he will return to the class-room, and resume his studies. As he advances in years and strength, he will be introduced to the more weighty and important concerns of agriculture, in which the senior classes will be engaged. The exercise or labor of all, however, will amount to no more than will be deemed necessary for healthful recreation and change, to diversify and lighten the monotonous and depressing drudgery of the mere student. In this way, by a varied course of study, rural exercise, and popular lectures, it is intended to accomplish the important work, and to give to agriculture an impulse that cannot fail to raise it to the rank it should assume, and ought to hold throughout the land.

The graduates of this college will be scholars, and gentlemen, who if they inherit an estate will know more than their gardeners, overseers, or land stewards,—be conversant with the breeds, character, and properties of stock,—the mechanism and use of implements,—the quality of soils, and the adaptation of manures, and withal, practical surveyors; while the taste acquired for rural life, will render the management of their plantations a pleasing occupation, combining both pleasure and profit. If, on the other hand, they should have to acquire an estate, what other graduates could hope to compete with them in the acquisition of property and honorable fame?

These views are respectfully submitted by way of prospectus, affording a glance at the aims and merits of the contemplated institution, and for the purpose of eliciting such share of patronage as will encourage the undersigned to carry out his long cherished design. If, therefore, eighty students shall offer, on or before the first day of July next, he will open the college on the first day of September following, with a faculty combining the best talent, both in literature and rural economy.

The terms will be *two hundred dollars* per annum, for board and tuition, payable half-yearly in advance—no extras, except for modern languages, for which it may be necessary to make some additional charge, all of which, when properly matured, will be stated in a prospectus, when the requisite number of students shall appear to be forthcoming.

Parents wishing to avail themselves of this plan of educating their sons, will please address James Gowen, Mount Airy, Philadelphia, stating age and acquirements in learning. It is requested that early application be made, as the opening of the college is contingent upon the number of students offering, and as much of the *materiel* necessary to its perfect organization must be withheld until it is ascertained that sufficient patronage will be accorded.

A word, as to the undersigned himself. To those who know him, it is needless to say, that this great undertaking is prompted by no interested motive whatever; for all the capital to be employed, and all the trouble and anxiety incurred, he expects not a dollar by way of profit or remuneration for his services. He therefore wishes to stand in the proper attitude before all, and leave to all the means of making a fair estimate, and coming to a proper determination so far as they may feel interested.

Philadelphia, Feb. 22d, 1847.

JAMES GOWEN.

We take great pleasure in commending Mr. Gowen's noble enterprise to the public, and can assure them that they may place every confidence in his plans. He is a gentleman of ample means; of a liberal and enlightened mind; of great perseverance; and whatever he promises, will be faithfully performed. His farm at Mount Airy is one of the best in the United States, it having been cultivated on the most enlightened and scientific principles for many years. Now is a golden opportunity for parents to properly educate their boys; for whatever be the profession of the man, a knowledge of the principles of agriculture will be of great service.

LETTERS FROM THE SOUTH.—No. 6.

NEW ORLEANS has a character and position as distinct and peculiar, as the territory of which it is the commercial, and up to the present time, has been the legislative capital; (a) and as the natural dépôt for two-thirds of the productive area of the United States, a brief notice of it may appropriately occupy a place in an agricultural journal.

De Soto, in 1539 or '40, was undoubtedly the first European who traversed the country bordering upon the outlets of the Mississippi; but like all the early Spanish adventurers, his object was gold and the precious metals, and he has left no observations on the country worthy of attention. In 1674, Joliet and Marquette, two French traders from Canada, discovered the river *via* the St. Lawrence, the great northern lakes, the Fox and *Ouisconsin* (as it formerly was and always should be written). In 1682, La Salle, Father Hennepin, and Tonti, entered the river from the same starting point, *via* the the lakes and the Illinois. La Salle explored it to the mouth, and Hennepin above the Falls of St. Anthony. The latter soon after went to Europe and published an account of his discoveries, and named the whole region about the mouth and west of the river, Louisiana. La Salle returned to Canada, and thence to Europe, where he fitted out a small squadron, for the purpose of establishing a French colony on the Mississippi, but missing the mouths, he passed on to the Bay of Espiritu Santo, at the mouth of the Guadaloupe, there landed in 1685, built a fort, and took formal possession of the country for the Crown of France. This bold and enterprising discoverer was murdered by his own men, in 1687, while pursuing with unwearied efforts the object of his expedition by land. In 1698, another expedition was fitted out in France, under D'Iberville and his brother Bienville, who after coasting along the northern shore of the Gulf of Mexico, and visiting Pensacola (then a Spanish settlement), and Mobile Bay, finally entered the Mississippi and formed a settlement.

New Orleans was first occupied in the spring of 1717, where barracks were erected, and a city laid out and named from the then regent of France. It occupies the left bank of the river, in latitude 29° 57' N., and longitude 13° 9' W. from Washington. When it came into possession of the United States by purchase, in 1803, it contained about 8,000 inhabitants. In 1810 it had increased to 17,242. By the census of 1840, its population was 102,000, and it is now estimated at near 120,000.

This is a rapid increase within a comparatively short period; but those who predict a destiny for it far in advance of all other American cities, have not duly considered the past, or anticipated the future. If we take a period from the close of the late war, since which our national industry has become essentially modified, and *manufactures*, as well as commerce, have become important elements in the growth of commercial emporia, we shall find that Boston, Philadelphia, Baltimore, and even Pittsburgh and Cincinnati, with their suburbs, have kept nearly an even pace with her in relative growth; while New York has immeasurably distanced her in the increase of wealth and population. If we look to the future, we shall see the mighty

efforts that the principal Atlantic cities are making (and which are fully sustained by the respective States they represent) to draw off to their own ports the rich products of the Mississippi valley. Already the Ohio is tapped by *five canals*, and one railroad; (b) the Mississippi will be reached from Lake Michigan, by a large canal the coming autumn; and a railroad from Philadelphia; and still another, with a canal terminating in Baltimore, will ere long stretch out their giant arms into the Ohio, to grasp the trade and products of the fertile West. And all this is but the *beginning* of the avenues which will be opened within the coming half century, by the indomitable energies of the East. Neither mountains nor valleys, neither distance nor expense, are any permanent hindrances to the progress of these highways of commerce; and although all may not be withdrawn by these commercial channels, yet enough will be diverted to check that rapid and excessive growth of New Orleans which some have so confidently predicted.

There are, moreover, some local hindrances here that will aid the incessant, uncompromising rivalry of the East. Its present somewhat insalubrious and enervating climate may be partially remedied by clearing and drainage, and a strict conformity both in habits and regimen to its peculiarities; the high rate of freights on the rivers (c); the excessive expense of vessels in reaching this port from the bar (d); and the onerous duties levied on most of the produce sent here, in the shape of inspection fees (e), may all be mitigated hereafter, and reduced to the lowest standard of remuneration for the necessary services rendered. But there is still the great objection that New Orleans is and for ever will be 1,000 miles farther from Europe than the northern cities; and consequently, freights, from this and other inevitable causes, must be much higher than from those ports. Manufactures will never become an important element in her growth; and without these, no city ever reached or long maintained an overshadowing ascendancy among enterprising rivals, where they were assiduously cherished.

Yet after abating so much from the overweening anticipations of some of her zealous sons, we may still concede a steady, rapid, irresistible growth to this large and enterprising city. Her advantages are manifest, and cannot, by any combination of events, be wholly inoperative. The navigable waters which flow past this city, drain a million and a half square miles of territory, more uniformly fertile than any other on the face of the globe. And nearly the whole of this is easily accessible for a large part of the year, by steamboats, through its numerous bayous, rivers, and lakes. These are generally navigable, too, at a season when the other avenues to the East are fast locked by ice, and soon after the products are gathered in, and the farmers and planters have most leisure to push them forward to a market. It is the only capital that can ever be established for an extensive region of fertile country immediately surrounding it, and which is destined ere long to contain a dense population; and if the peculiarity of its situation, and the circumstances which must for ever govern it, will not admit of its becoming one of mechanical or manufacturing im-

portance, the wants of its citizens and the adjacent country will make it the great mart of supply and demand for future millions of intelligent and affluent agriculturists.

Some idea of its rapid increase, and the magnitude of its present business, may be drawn from a bare enumeration of the receipts of some of the leading articles which seek their outlet here.

The following products were received in New Orleans during the years preceding the first of September:—

	1837.	1846.	Value in 1846.
Bacon, in casks and hhds.	1,456	37,305	\$1,672,000
Ditto in bulk, lbs.	1,492,877	492,700	
Bagging, pieces,.....	30,447	96,601	917,710
Bale rope, coils.....	21,256	56,678	255,051
Beans, bbls.....	5,519	16,585	66,340
Butter, kegs.....	7,369	44,172	203,580
Ditto bbls.....	199	1,494	
Beef, bbls. and tierces.....	9,859	62,231	580,784
Do. dried, lbs.....	130,646	98,200	
Cotton, bales.....	612,813	1,053,633	33,716,256
Corn, in ears, bbls.....	194,013	358,573	1,556,181
Do. shelled, sacks.....	369,090	1,166,120	
Cheese, boxes.....	201	57,392	114,784
Flour, bbls.....	253,500	837,985	3,770,932
Feathers, bags.....	152	4,607	115,175
Hemp, bundles.....	450	30,980	309,800
Hides.....	22,287	112,913	135,495
Hay, bundles.....	20,594	71,270	213,810
Iron, pig, tons.....	415	1,083	37,905
Lard, hhds., bbls., and kegs.....	207,489	442,653	2,729,381
Lead, pigs.....	260,223	785,394	1,963,484
Molasses, bbls.....	132,363	1,500,000	202,039
Oats, bbls. and sacks.....	32,180	269,386	
Oil, linseed, bbls.....	249	1,135	31,780
Oil, castor, bbls.....	905	2,379	45,201
Oil, lard, bbls.....	2,606	2,606	49,514
Potatoes, bbls.....	26,599	107,058	160,587
Pork, bbls.....	115,580	369,601	3,666,054
Do. hhds.....	531	9,988	
Do. in bulk, lbs.....	8,939,135	9,740,752	5,100,000
Sugar, hhds.....	93,109	72,896	
Tobacco leaf, hhds.....	28,501	72,896	2,605,320
Whisky, bbls.....	44,790	117,104	936,832
Wheat, bbls. and sacks.....	6,422	403,786	807,572
Making, with other enumerated articles, a total value of			\$77,193,464,

including the *entire crop* of sugar and molasses made in the State (a part only of which was received in this city). The former is estimated at 9,000,000 gallons, and the latter at 185,650 hhds.

The crop of sugar is less this year than last, owing to excessive rains, frosts, and other causes; and the cotton crop will fall short of the previous one received at this port, some 300,000 bales. But in many articles, the receipts this year up to the present time, against those of the last to same period, show the immense stock which can be forthcoming when prices call it out. Since September 1st, there were received at this port, to Feb. 20th;—

	1846.	1847.
Bacon, in hhds. and tierces.....	7,992	22,761
Ditto in bulk, lbs.....	11,000	244,952
Corn, in ears, bbls.....	94,542	195,319
Corn, shelled, sacks.....	340,937	753,151
Flour, bbls.....	372,364	697,964
Oats, bbls. and sacks.....	102,240	221,885
Wheat, bbls. and sacks.....	10,487	78,125

The quantity of corn that will pour down into this market on the rise of many of the tributary streams, if present prices are sustained, will probably exceed the anticipations of the most sanguine. Millions of bushels, which at ordinary prices are lavishly fed to stock at home, will, at the extravagant rates now paid for it, be carefully husbanded and brought to market. From 30 to 50 cents is the usual range of prices for it here. At 105 to 110, for which it now sells, the Wabash, the Illinois, or the Tennessee River farmers, will

receive from 50 to 80 cents for it at home, instead of 10 to 15, an excess of three to six for one of the usual price. The temptation of these prices will be irresistible, and every road, every by-path, and every streamlet, will groan under the load of Indian corn, wending its way to the seaboard to replenish the exhausted granaries and supply the starving millions of Europe. The result of our this year's commercial operations, will fully demonstrate the value of the progressive improvements of the present day; and the aid, aye, even the *life-sustaining* aid which the new continent has yielded to the old. America will have more than realized the filial devotion of the young Roman matron, who gave back from the exuberance of her own breasts, that life she had herself received from her famishing sire.

R. L. ALLEN.

New Orleans, Feb. 20th, 1847.

(a) The legislature meet in the city during its present session for the last time, the new Constitution having established Baton Rouge, 120 miles above, as the future capital of the State.

(b) The Philadelphia and Pittsburg, the Erie and Beaver, the Cleveland and Portsmouth, the Maumee and Miami, and the Maumee and Wabash canals, are already in successful operation; and the Cincinnati and Sandusky railroad will be completed during the present season.

(c) The freight from Pittsburg and Cincinnati to this place, is about the same that it will be from those cities to the seaboard, after the enlargement of the Erie canal.

(d) Vessels of 100 tons pay about \$100 for towage to the city from the mouth, and vessels of 1200 tons \$660, with a varying scale between these rates. Something less than half as much is paid for towing down.

(e) An intelligent commercial citizen estimates from authentic data, that the annual tax on produce here from inspections and their addenda, to come up fully to \$500,000 per annum.

REVIEW OF OCTOBER NO. OF THE AGRICULTURIST.

Popular Errors, No. 1.—One of the most popular, or, at least, common errors of the present day, is that of too much scribbling about nothing; I propose to correct my own errors, so far as I am guilty, by giving the three last No's. of vol. 5, a passing notice; and hereafter, I hope to be able to review each No. as it appears, in which I hope I shall not be so prolix as to be tedious to my readers.

As I shall be limited for space, I must only notice such articles, as I think I can add value to. The whole of these articles upon popular errors, are in excellent style, and I hope will be continued.

Trees and Shrubbery Around the House.—The distance of "one hundred feet from the house," will prohibit all the dwellers upon village lots, from enjoying the luxury of trees, either upon the streets or lots; while nothing gives a more pleasing appearance, in the view of a country village, than towering trees. Besides, who ever knew a house struck with lightning, when surrounded with green trees? They are good substitutes for lightning rods. I consider your objections insufficient; for most of them may be obviated by improved culture. Therefore, I say

to all that own one single foot of ground, set out a tree, a shrub, or vine.

Tendency of Lime to Sink Below the Surface.—It appears to me, that all who are so far advanced in geological science, as to know how lime-stone is formed, must be aware that such will be the natural tendency of limeing land, to form itself again into stone, below the surface. It will, therefore, be found necessary to keep such lands constantly stirred.

Prices of Produce.—You say you hear much complaint among farmers, of the low price of produce. And do they not have reason to complain? I will take the article of wheat; the average yield in this state [New York], is about thirteen bushels per acre. What is the average price? I think seventy-five cents above the mark. This is grown upon land averaging \$25 in value, per acre, at least; a fair interest, including repairs of fences, &c., is ten per cent. This leaves \$7.25 per acre, to pay for seed and labor. Who will say that the price is not too low? At the West, the boasted wheat region of the West, the case is still worse. Having this matter in my mind, I wrote to a gentleman near Chicago, who is well known by name and good reputation to agricultural readers, for some facts in regard to wheat culture in that vicinity. He gives it as his opinion, that for six years, the average price of wheat in Chicago has not exceeded 50 cents a bushel; and that the average distance, that it has been hauled over very bad new country roads, is forty miles, in loads not exceeding an average of thirty bushels to the pair of horses; and that the average yield of all the broad acres sown, for six years, has certainly been less than ten bushels to the acre. Such being the fact, there is no wonder that the farmer complains that the price of his produce is too low. The price does not pay him twenty-five cents a day for his labor. It is "too low."

Economical Hay-press.—Although you think that the description "will be sufficiently intelligible to enable any ingenious carpenter to build one," I venture to assert, that not one in ten possesses ingenuity enough to discover how to build one like this, who never saw one, without further and more intelligible description. It is the principle upon which the press works, that should have been described, and not the size of the timbers—a very unimportant matter.

Show of the N. Y. State Ag. Soc. at Auburn.—I was sorry to find that the same charges against Auburn tavern keepers, were made at this show, as were made last year against those at Utica. Something is wrong, you may depend upon it, and a reformation upon this, and several other things connected with this society, must be had, or I predict a general "blow up." Let the managers look to it. In regard to the trial of plows, I beg leave to suggest the propriety of appointing a standing committee, to make a full and perfect trial of all the plows that may be offered, and upon all the various kinds of soil that their owners contend they are best adapted to; the expense of which should be paid out of the funds of the society, and the report of such committee, published, would be of undoubted value, while those annually made at the shows, are of no value whatever.

The Ploughing-Match, as a matter of show, does

very well, being a little exciting and of interest in the exhibition.

European Agriculture.—Letter of Mr. Coleman.—No man in this country entertains higher respect for this distinguished writer upon agriculture, than does your reviewer. And in the article which he characterises as *severe* upon him, no personal severity toward Mr. C. was felt. I only meant to tell Mr. Coleman, what very many persons in this country think, but dare not say, (or rather dislike to say) of his work, i. e., that it is a most decided failure, or, at least, a falling off from what was expected, judging from his former publications. For one, I am candidly of the opinion, that Mr. Coleman's tour will not greatly "advance the agricultural improvement of my own country, and her substantial welfare and glory." And I fully believe, that a tour in this country might be made far more interesting to readers in the United States.

Destruction of Weeds in Paved Yards.—This article is another of the family of *indefinites*, which are so numerous, and so much complained of in other parts of my review. What can be known by "diluting the liquid, more or less, according to circumstances," before using. But it is of no consequence, for I don't believe it will kill a weed, unless put on boiling hot, without diluting at all, and in plentiful quantities; and then the weeds of this country won't stay *kilt*, whatever they may do at the "Mint of Paris."

Illustrations of the Sexes in the Strawberry.—These illustrations are first rate, and would enable "any ingenious carpenter" to distinguish one from the other.

"Facts are things that dinna lie,"

But often are disputed,

would be an improvement of the distich quoted by Mr. Lewis. And as improved, it will be found applicable to the subject of *Butter making*, for Mr. A. H., of Setauket, says, "sour milk, we find, will not produce so much, nor so good butter, as fresh milk;" which he has found "by three years careful experiments;" while we have found, by fifteen years experience, that to let the cream remain unchurned until it becomes slightly sour, will make such butter as has long borne the reputation of being "the best butter in the whole country." Besides, it is also thoroughly "*spoiled*" in warm weather, by washing it in cold water.

Development of Buds in Corn.—This article of Mr. Darrach, hints that the want of light prevents the lower buds from becoming perfected. Then what would be the effect of topping the corn, soon after the formation of the buds, so as to let in the light more freely. Of course a portion of the tops must be left to produce pollen. Will Mr. D. try the experiment, and give us the result. Besides, let us have some of the "practical reasoning" of that "other lecture." "Light" is what we want, and if it exists at "Walden," it should not be "hid under a bushel" of corn.

The Atmosphere near the Sea, "it seems, contains less carbonic acid than that over the land?" Has it also ever been ascertained, that the cause of so much bilious sickness upon the rich lands of the great Mississippi valley, is the great excess of carbonic acid that abounds there? That fact is worthy

of being inquired into, and what is best to counteract it. Having been born and bred near the ocean, and being an old sailor, I feel particularly interested in this matter.

Ladies' Department—Domestic Education of Cats.—I am a great friend of cats, but still I am inclined to think that the same diet which I prescribed for dogs, would be highly beneficial for the same proportion of cats. As for educating them, it appears, from the article under review, that it has about the same effect upon them that a modern fashionable education has upon some of our farmers' daughters. It so changes their natures as totally to unfit them for all the useful avocations of life. One will catch no mice, while both incline to loll upon the sofa, "adorned in silks and jewels rare," and who, to dispel ennui, not only resort to the playfulness of the educated pussy, but endure the company of some bewhiskered fop, whose most interesting speech would be, if puss was of the Russian breed, "La! what a long tail our cat has got."

To make Kitchen Vegetables tender—From the French.—Now my wife, who is a plain old Pennsylvanian, and no Frenchman, says she can improve this recipe; and every body knows she is a good cook; hear her: "To a gallon of peas or beans, either green or dry, add a teaspoonful of saleratus, while cooking, and they will boil tender, much quicker, and be of a brighter color. Now everybody can practice this, while not one in ten have the soda, or know what it is, or how to use it; for the "small quantity" to be thrown in the pot, among an untold quantity of vegetables, is about as definite as the "size of that famous piece of chalk."

Potatoes and Flour will prevent the Incrustation of Boilers, &c.—That is true. It is a valuable recipe. But mind, old lady, you must never boil any more "hard water" in your tea kettle, if you do, the potatoes and flour won't do any good.

Rumination, &c., in the Boys' Department, is an article that may be read with profit, by a great many old boys, and ought to be read in every school. It is a capital article. Somehow, it seems as though this department of the paper always contained the best of the articles. I hope the boys always read them. Peter Parley and I have a great love for these little chaps. I wish our editor would give more pictures in the boys' part of the paper. But then he has no boys of his own, but he ought not to forget that his father had.

Vestiges of Creation.—I am not about to review this work, although I contend that all may profit by its reading. I have one word to say to the closing paragraph of the Editor's notice, in his October table. You ask for proof from the "nameless author," that "new species are still appearing upon the earth." This is not fair. It cannot be proved. New species are discovered, but who knows that they never existed before. But it can be proved, and is proved in the *Vestiges of Creation*, that many species did once exist, that exist now no more. Is that not proof enough to entitle the author to a fair show of respect for his new theory? Who knows but the "potatoe disease," is indicative that that species, too, is "passing away?" REVIEWER.

A New Critical Dictionary.—We wish somebody would get up a reformed dictionary, with all the words spelled as they are rightly pronounced.

Mr. Norton's Letters.—No. 4.

I HAVE lately been much interested, in reading and hearing accounts of the Waterstaat, a corps of engineers, who have the direction of everything connected with the canals, rivers, and lakes of Holland. If we consider the situation of the country, we see how necessary must be such a body of men.

A great portion of the coast must be protected against the inroads of the sea, by dykes. In some places, at high water, the sea is many feet above the level of the land, and the works necessary for its protection are of a most gigantic nature. When a long succession of southwesterly winds drive the waters of the Atlantic up into the German ocean, and are followed by strong northerly gales, an immense body of water flows down between Great Britain and the Continent, and is not able to pass all at once, through the Straits of Dover; it then flows back upon the Dutch coast, and tests to the utmost the solidity of its works of defence. At such a time, the advancing tide is watched with the most intense eagerness, and the result, whether it stops at a certain point, or rises a single inch above it, determines the safety or destruction of lives and property to an immense extent. While the sea is without, another enemy, almost equally formidable, exists within the country itself; this is the Rhine. The bottom of this river, is in many places, above the adjacent land; and embankments of vast size and great strength are required, to keep within bounds its winter and spring floods. The ice is a source of great difficulty, and much apprehension. If a stoppage take place, the back water rises so as to overflow the highest dykes. The greatest time of danger is when the ice on the German Rhine breaks up before that on the Dutch Rhine. In 1799, an ice dam formed, and the water at Nymegen rose seven feet in one hour; the dykes were broken, and the icebergs swept across the folders, destroying men, houses, and cattle.

In a country thus threatened, within and without, the engineers of the Waterstaat are a most important body, since upon their skill, depends not only the enjoyment of property, but of life itself, to a very large portion of the population. Such is the perfection of the system pursued at present, and so great the improvements in the construction of the dykes, that inundations are much less frequent than formerly.

These engineers are of course educated with especial reference to their business; but there are no published books, which give plans or details of the works under their control. When one of them dies, his papers are given up to the government. The strength of Holland, in a military point of view, consists in its capability of being flooded with water, and thus rendering impossible the advance of a foe. Nothing, therefore, is allowed to be published, which might give an enemy such a knowledge of the sluices, and different communications, as would enable him to thwart the defensive measures of the Dutch.

The stations of the Waterstaat are numerous, and are always placed at some point where special care and watchfulness are required. During the winter, they are placed along the whole course of the Rhine, and the officers are required to watch every

change in the air, as well as in the level of the water. Each station has its guage minutely divided, and the height of the water is duly registered each day. As far as possible, every emergency is provided for. By a convention with the Prussian government, if ever the water reaches a certain height in the guage at Arnheim, a dam shutting up one of the old channels of the Rhine is to be cut through; the river would then find its way to the sea by a new channel, overwhelming everything in its course. That this should happen, is by no means an improbable contingency; the water has already, several times, been very near the specified height.

At or near each of the Waterstaat stations, are collected stores of clay, straw, willow wicker work, faggots, &c., &c., materials for strengthening the dykes. When the engineers apprehend danger, they immediately apply to the magistrates of the nearest village for men; every other employment must give way to that of raising a temporary dyke upon the top of the threatened portion. The alarm bells are rung, and the whole country is in motion. Any troops who may be posted near, are required to repair to the scene of action, to maintain order, and assist, if necessary. The burgher force, a kind of militia, also is obliged to appear with arms, at once.

The works erected at such times, are removed when the danger is over. Notwithstanding every effort, both the sea and the Rhine sometimes break bounds, and at such times the destruction of life and property is enormous. The annals of one province, Friesland, present a series of no less than thirty-two inundations. In one of these, the Zuider Zee was formed, and eighty thousand persons lost their lives. The inundation which formed the Gulf of Dollart, in the province of Groningen, swallowed up forty-four villages. Even in the last century, fifteen hundred and sixty habitations in that province disappeared at once. The Haarlemer Meer, near Amsterdam, was also formed by an overflow of the waters. Such is the existence of a great part of Holland, constantly struggling to keep above water. Habit accustoms the people to their position, and they can live tranquilly at the foot of one of their dykes, and hear the sea thundering on the outside, fifteen or twenty feet above their heads.

In the draining of the Haarlemer Meer, and in the projection of still more gigantic works, they are once more laying bare the houses and the fields of their ancestors; once more endeavoring to confine an enemy, which before became, instead of a prisoner, a conqueror. Modern science and resources will probably enable them to succeed better now; but for my own part, I much prefer living in a country where it is not necessary to fish up land from the bottom of the sea. JOHN P. NORTON.

Utrecht, Jan. 2d, 1847.

A CALIFORNIA FARMER.—An emigrant says his stock consists of 4,000 head of oxen, 1,700 horses and mules, 3,000 sheep, and as many hogs. They all pasture themselves in the rich prairies and bottoms of the Sacramento, and are attended by Indians, of whom he employs 400. His annual crop of wheat is about 12,000 bushels, with barley, peas, beans, &c., in proportion.

RENOVATION OF THE POTATO.

A POTATO that will not produce more than one hundred and fifty bushels to the acre, is not worth the farmer's attention, much less if it be in a diseased state; and, in my opinion, the old potato is not worth redemption from disease, even if it could be effected. The world, I conceive, is in immediate want of new varieties; *new*, in their origin from the seed; *new*, in quality and productiveness. Such potatoes have been produced, and are in advance of the old crop in every important particular. They are cultivated by several persons in Europe, as well as in this country. A gentleman in Germany, near Hamburg, says that he has practised raising potatoes from seed for fifteen years, and has obtained splendid varieties, which are not attacked with the disease. I have practised the same method for seven years, and *know*, by my own experiments and observations, that it is the *true course* to pursue.

I am now making preparations for the culture of about thirty acres, the ensuing summer, for *seedling tubers*, and the *seed of seedlings*. The latter is in the fifth successive year from the old potato. I expect my seedling tubers will produce four hundred or five hundred bushels to the acre; and from the seed of my seedlings I hope to obtain at least three hundred bushels per acre, the tubers weighing ten ounces each. I think this estimate a safe one, though much will depend upon the season. The summer droughts in this laky region operate very unfavorably to the potato crop.

The coming season, I intend to gather a large quantity of seed from the balls of my seedling tubers, which grow on the vines in great abundance, while on many of the old varieties they have totally disappeared. Half an ounce of seed will plant a quarter of an acre. It can be conveyed in letters by mail with perfect convenience. The best, fully developed, distinct varieties of tubers, selected with care, will probably be in market in September next, from which seedsmen and others can be supplied.

Since the commencement of the potato malady, some persons have produced seedlings from old tubers, have found them diseased the first year of planting, and have abandoned the experiment, pronouncing the method as useless. The first seedlings from a stock so deteriorated or diseased, if found perfectly healthy would seem a miracle. The perfect redemption from the malady is to be looked for only through successive generations, by the consecutive planting and culture of seedling tubers, and the seed of the same. Every year's experiment brings both the tuber and its seed essentially in advance of its former condition. Seven years ago, I found great difficulty in preserving my new potato plants from the frost and little black bugs. In the autumn, the product was so trifling that I was near ready to abandon the experiment. Last summer, in the fourth succession, I raised, from a thimbleful of seeds, twelve bushels of tubers. Some of the single plants had on their roots one thousand potatoes, weighing, in a few instances, seven ounces each. N. S. SMITH.

Buffalo, N. Y., Feb. 26th, 1847.

We recommend such of our friends as are in want of new seedling potatoes, to apply to our correspondent for them.

Ladies' Department.

A FEATHER HOUSE.

IN a neighboring county, famous for fine poultry and neat housewives, I lately saw a comfort which I believe to be entirely local, but which needs only to be known to be universally adopted on farms where much poultry is prepared for market. In the case I allude to it is an appendage to the spring-house, but it could easily be built on any spot more convenient to those concerned, as it is the thing itself, and not the situation, that seems to be particularly desirable.

Behind this spring-house (which, by the way, is one of the most tasteful affairs I know of), and joining, but not communicating with it, is a small room with two windows opposite to each other, placed high from the floor. A door at the gable end, with a pretty trellised entrance, overgrown with coral honey-suckles and wild clematis vines, which had clambered over the roof, and curtained both windows. Inside it is furnished with a white wooden table in the middle, on either side of which is a low chair, with two large baskets near each. Into this room all the poultry is taken to be plucked. The feathers are thrown into the baskets—those for beds, &c., into one, and the refuse into the other. When they are filled, these last are carefully buried in the dunghill, where they become valuable manure, and the slovenly and unsightly effect of feathers flying in all directions, or lying in heaps to breed vermin, is avoided. The best feathers and down are put into bags, and hung up on hooks near the roof, until wanted. A stove should be added for winter's use, and the pipe carried into the spring-house chimney.

The operations were performed by the farmer's daughters, as pretty and fresh-colored as the flowers blooming around them. They were dressed in plain dark cotton gowns, with large check aprons, and the neatest, primmest, whitest little caps (the muslin rather thick) tied under their chins, and drawn close down to cover and protect the hair from the down and dust.

The house was pretty, the girls were prettier, and I fell in love with them all at once.

Eutawah.

E. S.

TREATMENT OF CANARY BIRDS UNDER DISEASE.

THE most common cause of disease in these birds proceeds from a superabundance of food, which brings on repletion, or a state of being too full. In this case the intestines descend to the extremities of the body, and appear through the skin, while the feathers on the part affected fall off, and the poor bird, after a few days, pines and dies. If the disease is not too far gone, putting them in separate cages, and confining them to the cooling diet of water and lettuce-seed, may save the lives of many.

The process of moulting, which usually takes place five or six weeks after they are hatched, is frequently fatal to them. The best remedy for this, yet known, is to put a small piece of iron into the water they drink, keeping them warm during the six weeks or two months which generally elapse before they regain their strength. This malady, to

which they are all subject, is often fatal to the female after the sixth or seventh year; and even the male, though from superior attention he may recover and continue occasionally to sing, and survive his mate four or five years. He appears melancholy from this period, till he gradually droops, and falls a victim to this evil.

The Canary bird is also subject to epilepsy, or a convulsion of the whole or a part of the body, with loss of sense, asthma, ulcers in the throat, and to extinction or loss of the voice. The cure for the epilepsy is doubtful; if a drop of blood fall from the bill, when laboring under this disease, it is said the bird will recover life and sense; but if the blood be touched prior to falling off itself, it will occasion death. If the bird recover from the first attack, it frequently lives many years without any alteration of note. Another cure for the epilepsy is to inflict a slight wound in the foot. Asthma may be cured by plantain, or hard biscuit soaked in white wine. Ulcers, like repletion, must be cured by cooling food. For extinction of voice, the cure may be effected by the hard yolk of eggs, chopped up with crumbs of bread, giving for drink a little liquorice-root or a blade of saffron in water.

In addition to these evils, the Canary is infested by a small insect, if due attention is not paid to cleanliness. To avoid this, the birds should have plenty of water to bathe in, a new cage covered with new cloth, and the seeds with which they are fed well sifted and washed. These attentions, if troublesome, are nevertheless necessary to possess a thriving bird. When wild, all birds require water, and this is also necessary to the Canary. Z.

TO CURE HERRINGS.

THOSE who are so fortunate as to have eaten pickled herrings in Virginia, will have reason to thank me for the following recipe, which is still in common use in the "Old Dominion," where they understand perfectly what good eating is:—Boil and skim the pickle of your last year's beef, returning it to the barrel, and take it to the water side. As the fish are taken from the net, be careful that they are not bruised; pick out the largest herrings, and throw them alive into the brine. They die almost instantly, but not before they have swallowed some, which improves them much. Let them remain until the next day. Put a layer of coarse salt at the bottom of a dry, tight barrel. Take the fish out of the pickle, and lay them for a few minutes upon a board to drain; then put in a layer of herrings, cover them with a thick layer of coarse salt mixed with a little saltpetre; then herrings, then salt, until the barrel is full, and cover with a thick layer of salt. Put the head loosely on the barrel, and if they do not make pickle enough in a fortnight add enough to cover them. They are better when a year or even two years old than at first.

When wanted, soak some of them in pure cold water, three or four hours; scale and pull out the gills, and dry them in a towel. Wrap each herring by itself in a piece of white paper nicely rubbed over with butter, and broil it carefully without burning the paper. Observe these rules, and you will have a dish fit for an epicure.

Eutawah.

E. S.

Boys' Department.

A CHAPTER ON GRASSES.—No. 4.

RICE (*Oryza sativa*) was cultivated in the East, long before it was introduced into Egypt, from whence it was taken to Greece. It was brought to Carolina about the year 1700.^(a) By some writers it is placed second to wheat, as affording food to a larger proportion of human beings than any known grain, though intrinsically of less value. It has altered the face of the globe, and the destinies of nations; for there can be no reasonable doubt, it is to this grain that the Chinese and Hindoos owe their early civilization. Immense districts of country would have remained irreclaimable and desolate, if nature had not granted to a simple grass, the property of growing exclusively in marshy and inundated grounds. The Chinese method of cultivating is very curious, and if any of the boys want to know about it, they must let me know, and I will give a description of it, for their benefit, at some future time.

Though generally capable of coming to maturity only in hot countries, there is a kind, probably another species, hardy enough to flourish even on the edge of the Himalayan snows; and a small crop of the common kind, is said to have ripened its seeds in England, on the banks of the river Thames.

A quarter of a pound of rice, boiled slowly, will yield more than a pound of solid nutritious food.

The early history of Rye, (*Secale cereale*), the only known species of the genus, is veiled in obscurity, as completely as that of any other grain, though it has been cultivated in Europe, from time immemorial. It affords the principal food of the peasants, in the greater part of the North of Europe, and even in the more genial climate of the south and middle provinces of France, the lower class of people seldom know any other than rye bread. Little more than a quarter of a century ago, it was the universal custom, in France and Germany, as it still is in Poland and Russia, for travellers to carry their own provisions, as nothing better was to be found at the relay houses, and the best hotels, even upon the most frequented roads, than the coarsest rye, or barley bread; and it was no unusual occurrence for the postilions to share with their horses, their allowance of this black, but not unpalatable bread.

Barley (both the *Hordeum vulgare* and *Hordeum distichum*) is extensively cultivated for brewing beer; the latter being preferred by some farmers, as ripening earlier, and yielding a heavier grain. In Europe, it is used as food for man as well as horses; barley bread being the chief vegetable diet of the peasants in Norway, Sweden, Siberia, and even in the mountainous parts of Scotland.

Oats (*Avena sativa*), though making a coarse kind of bread, used by the poorest inhabitants of the most northern regions of Europe, is raised there principally, as it is here exclusively, as food for horses. An inappreciable quantity being made into oat meal, is a light, wholesome diet for sick persons.

Two or three hundred years ago, when the occult sciences were much in fashion, and learned men believed the baser metals could be transmuted into

gold, it should not have surprised us to learn, that they thought the cultivated grains were liable to similar changes, through the influence of soil and climate. Thus they affirmed, wheat became rye, when sown upon a worn-out soil; that, after a time, under unfavorable influences, turned to barley, which degenerated to oats—which, by longer neglect, became hay-grass, from which, the transition to broom-grass or cheat was easy and sure. These adepts did not stop here, but believed that, with careful culture and fertile soil, the seed of this same cheat, would be made to perform a retrograde movement, as far on the same road, as would bring it back to rye; but, higher in the scale it could not be made to go—never having been known to become wheat again. It is a pity their patience did not hold out a little longer, and the wonder might have been completed. Recollecting the ignorance of natural science, which was universal in those times, such credulity can be forgiven; but can we be equally lenient? Can we account for the undoubted fact, that in this enlightened age, there are to be found intelligent men, who hesitate not to declare their belief in the change, and that they have investigated the subject, and have witnessed the gradual passage of wheat into cheat, if it be allowed to grow wild on a thin, sterile soil? As well might they expect a crop of water melons from a pumpkin vine.

Perhaps some clever boy will make the experiment; let him proceed cautiously. Bake a bushel of earth, which will make it poor enough, and destroy all the seeds that might be mingled with the most carefully sifted—then spread it out thickly, over a garden plot, where no grain has been grown for years, or over a sod would be better, and then sow some wheat that has been picked grain by grain; and next year, publish the result. E. S.

Eutawah.

(a) It would appear, from the Oriental Repository, that, as early as 1698, rice was cultivated in Carolina, as 60 tons were imported from that colony into England, that year.

FACTS IN NATURAL HISTORY FOR BOYS TO LEARN.

Is there any difference in the mode of lying down of a horse or an ox? Is it true that a horse, in getting up, rises first on his fore legs, before rising upon his hind ones? and that an ox, on the contrary, rises first upon his hind legs, and often remains a few seconds upon his knees until his hind legs are straightened?

When the tail of a dog is of two colors, and one of them white, what color is the tip end?

When the legs of turkeys and hens are black, what color are the bottoms of their feet?

If a strange dog approach you, and you stoop as if to pick up a stone, will he run away or come nearer to you?

TO PREVENT THE YELLOWS IN PEACH-TREES.—It is said, and upon pretty good authority, that about one quart of strong potash ley, poured round the body and roots of a peach-tree, twice a year, will prevent the yellows; and even restore them after they are diseased.

FOREIGN AGRICULTURAL NEWS.

By the arrival of the Steamer *Hibernia* we are in receipt of our foreign journals to March 4th.

MARKETS.—*Ashes*, Pots have advanced 2s. per cwt., Pearls remain as per our last. *Cotton*, a decline of $\frac{1}{2}$ d. per lb., stock on hand at Liverpool on the 1st of March, 484,000 bales, against 803,000 same time last year. *Flour and Indian Meal* had fluctuated somewhat during the past month, but just before the steamer sailed a slight advance was established. *Beef*, an advance of 2s. to 4s. per tierce. *Pork*, 3s. to 5s. per bbl. *Lard*, scarce and bringing extreme prices. *Butter* an advance of 4s. to 6s. the cwt. *Cheese* a reduction of 3s. to 4s. pr. cwt. *Guano*, a slight improvement. *Rice*, a decline of 4s. and 5s. the cwt. *Naval Stores* scarce at improved prices. *Tallow* firm. *Tobacco* large sales. *Wool* from the United States when put up in fair condition realizes good prices; but so much of it is badly washed, ill cleaned, and containing the dirty thigh locks wrapped up inside the fleeces, that purchasers have become completely disgusted, and bid for it with great reluctance. It is disgraceful to the country that it is not shipped in better condition.

The Manure Heap in Holland.—Great attention is paid to the dung, which is put up into neat heaps at the back of the house, consisting of alternate layers of turf and manure from the byre, and watered every now and then by the liquids previously collected from all the houses, in a cask sunk in the ground.

Holland Cows.—The cows are beautiful, and kept in the finest order; indeed many farmers seeing them would be apt to consider them too fat to give milk. They are black and white, and many of them are marked like the sheeted breed of cattle, the colors being black and white instead of brown and white, as in the latter. They are very small in the bone, have small heads, thin necks, and capacious carcasses, with large udders. This is the description of cattle found all over Holland.

Handling as a Test of the Fattening Properties of Animals.—In all domestic animals the skin or hide forms one of the best means by which we can estimate their fattening properties. In the handling of oxen, if the hide be found soft and silky to the touch, it affords a proof of a tendency in the animal to take meat. A beast having a perfect touch will have a thick loose skin, floating, as it were, on a layer of soft fat yielding to the slightest pressure, and springing back towards the finger like a piece of soft thick chamois leather. Such a skin will be usually covered with an abundance of glossy hair feeling like a bed of moss, and hence is very appropriately termed a mossy skin. But a thick firm skin, which is generally covered by thick-set, hard, short hair, always handles hard, and indicates a bad feeder.

Value of the Hoofs and Horns of Cattle.—The hoofs and horns of a hundred head of cattle are daily consumed in Campsie Alum Works in the manufacture of that beautiful yellow salt, prussiate of potash, which Mr. Macintosh introduced among the calico-printers, who use it extensively to produce very showy blues and greens. It is prepared by burning the hoofs and horns in iron pots, along with potash and a requisite quantity of iron. The residue, after this combustion, is laxivated with water, and when the solution is sufficiently concentrated, the prussiate of potash crystallizes.

Nutritious Value of Bones.—It would be well if some good cook, acquainted with a little chemistry, would make some experiments upon the cookery of bone, which might be made to yield many soups and other palatable and nutritious dishes. Professor Brande observes that "Bone constitutes upon an average, a fifth part of the weight of an animal, and one-third of the weight of bone may be reckoned as good substantial

food. The weight of butcher's meat consumed in London annually is supposed to be 172,000,000 lbs., including 35,000,000 lbs. of bone, which would yield 11,000,000 lbs. of dry gelatine, or real nutritive matter, which, at present, is so far wasted as not to be applied to the direct support of human life. The bones of pork, game, poultry, and fish, not included in this statement, must also be of great amount. From all or any of these, an excellent dry gelatine, or portable soup, might be prepared and sold for about 2s. per lb., equivalent to three or four times its weight of raw meat."

Tubercular Consumption, which is very prevalent among the cows which supply milk to the inhabitants of some large towns, is attributed by Sir James Clark to their being immured during part of every year in dairies, perfectly closed, and which being too small for the number of animals they contain, soon become filled with heated vitiated air, for the removal of which no contrivance is made. Recently there has prevailed in the dairies of London and its vicinity, a new disease, which chiefly attacks cattle in the hinder extremities, paralyzing their limbs, and presenting many of the ordinary symptoms of pleuro-pneumonia.

Rearing Calves.—Calves may be reared without milk after a few days from their birth. Linseed porridge, made by boiling a quart of seed in eight or ten gallons of water, and further thickened by three pints or two quarts of flour: oats are perhaps best; but flour made of the large broad bean, or even the common field bean or barley, will do. This should be given new-milk-warm.

Farming in Russia.—Colonel Pochwissneff farms his property on a four course shift; he has 400 acres in rye, 400 in oats, 400 in clover, buckwheat, peas and potatoes, and 400 in summer fallow. He employs 80 men and 80 women, and turns out 80 sochas or ploughs with a horse and a harrow to each two ploughs, and sows, ploughs and harrows at the rate of 100 acres per day. Colonel Pochwissneff mentions, that the original invention of the socha is lost in antiquity, but it is known that they have remained unaltered for 400 years.

Cut Straw Litter.—Mr. Browne has about 50 head of young cattle in stalls, their food, whether green or dry, cut for them. They are all littered daily with cut straw, which effectually absorbs all moisture. The stalls are cleared out every second week, and the manure thus obtained is fit for immediate use. The cattle are thus kept clean and do well. The straw is cut into pieces of from one to two inches in length, by means of a steam-engine (employed for the general use of the establishment), at an expense of one shilling for each 400 bushels. The manure, from its short texture, does not interfere with the working of the implements employed on the land; and in the spring may be applied as a top-dressing for wheat, without obstructing the operation of the hoe. It may be applied to grain or root crops with great advantage. It may then be mixed with the soil by the hoe, and in dry seasons, on dry soils, such application of cut straw manure is attended with great advantages. Coarse salt is sprinkled occasionally on the manure-heaps, for the purpose of preventing their becoming over-heated.

Substitute for Potatoes.—The Scottish farmers are substituting beans and turnips on the land hitherto employed for potatoes.

Importation of Seed Potatoes.—A large quantity of foreign potatoes, for seed, have been imported into London.

Rise of Bread in France.—The price of bread in Paris has again been raised two centimes the kilogramme, or about $\frac{1}{2}$ d. on the 4lb loaf.

Number of Horses in England.—There are 1,300,000 horses in England, each of which consumes the produce of as much land as would feed eight men.

Editor's Table.

JOURNAL OF THE TEXIAN EXPEDITION AGAINST MIER; with Reflections upon the Present Political and Probable Future Relations of Texas, Mexico, and the United States. By Thomas J. Green. Illustrated with copper-plate Engravings. New York: Harper & Brothers, pp. 488, 8vo. Price \$2.00. The nature of this work is sufficiently indicated by its title, and those who are desirous of obtaining information respecting Mexico, particularly at the present period of its history, should, before all others, purchase it.

LATROBE'S RAMBLER IN MEXICO. New York: Harpers. 12mo. Price 65 cents. Of recent tourists in Mexico, we think no one has given a more graphic picture of the manners and scenery of that country than Latrobe; and like the above named work by Mr. Green, the Rambler cannot fail to be read with interest by all at the present time.

TRAVELS IN PERU, during the years 1838-42, on the Coast, in the Sierra, across the Cordilleras and the Andes, into the Primeval Forests. By Dr. J. J. Von Tschudi. In two parts. New York: Wiley & Putnam, pp. 354, 12mo. Price 37½ cents each. This little work, which forms a part of the Library of Choice Reading, probably contains more information on the present condition of Peru, as regards its natural history, agriculture, manners, customs, and occupation of its inhabitants, &c., than any work extant.

Dogs; their Origin and Varieties; Directions as to their General Management, and Simple Instructions as to their Treatment under Disease. By H. D. Richardson, Author of Domestic Fowls, &c., with twelve Illustrations, engraved on Wood. D. Appleton & Co., 200 Broadway, pp. 115, 18mo. Price 25 cents. We seldom have read a work with more heart-felt pleasure than the little book before us. The origin of the Dog, the faithful and constant "friend of man," may be traced back to remote ages of "Animated Nature," and the training of this generous quadruped seems to have been one of the first arts invented by the human race; and the result of this art was the conquest and peaceful possession of the earth. Various poets and moralists, both ancient and modern, have delighted in commemorating the virtues of what they have been pleased to call the "glorious, never-to-be-forgotten conquest of reason over instinct;"—yes, from the days of Homer, who hymned the fidelity of Argus, the old dog of Ulysses, in the Odyssey, to our own times, when Lord Byron, in his youth, penned the epitaph upon his faithful favorite at Newstead; and the late Thomas Campbell sang in one of his celebrated ballads, of the old harper, by the Shannon, and his dog—where the simple tale of Colin and "his poor dog Tray;"—the old shepherd and the old shepherd's dog—was adorned with plaintive verse. But more of this anon. The neat and tasteful manner in which this book is got up, its exceedingly low price, and its general utility in the management of the dog, cannot fail to insure an extensive circulation.

THE FAMILY KITCHEN GARDENER; containing Plain and Accurate Descriptions of all the different Species and Varieties of Culinary Vegetables; with their Botanical, English, French, and German names, alphabetically arranged, and the Best Mode of cultivating them, in the Garden or under Glass; with a Description of Implements and Medicinal Herbs in General Use. Also, Descriptions and Characters of the most Select Fruits, their Management, Propagation, and Culture. Illustrated with 25 Engravings. By Robert Buist, Author of the American Flower-Garden Directory, Rose Manual, &c. New York: J. C. Riker. 12mo. From a cursory view of this work, and judging from Mr. Buist's other publications, we commend the treatise to the attention of all who have a desire to improve

their kitchen gardens. It is for sale by C. M. Saxton, 205 Broadway, N. Y.

BAGLEY'S GOLD PENS.—We would call the attention of our readers to Messrs. Bagley & Co.'s advertisement of Gold Pens, in another part of our columns. These prime articles have long been in use, and when once obtained, one will last for many years without repair; and of course will prove cheaper in the end than any other kind of pen in use.

AINSLIE'S BRICK-BURNING KILN.—This kiln for drying and burning bricks and tiles, is composed of various compartments, by which the heat from the first passes into the second, from thence into the third, and so on—thus economising the fuel; and when the tiles in the first are burnt, those of the second are half burnt, to which the greatest heat is then applied, and the chambers are taken in succession—the thorough drying of the bricks being completed by using the heat after it has completed the burning. This new apparatus has been proved on a large scale; and unlike the common method, by which, frequently, one-quarter of the article is spoiled, in this every brick and tile is said to be as perfect in shape as it entered, and thoroughly burned.—*Year-Book of Facts.*

CONCENTRATED GRAVY OF MEAT.—This article is manufactured at Sydney, New South Wales, from the carcasses of oxen and sheep, which are bred there for the sake of their tallow, wool, hides, and bones. The value of oxen in Australia is from 15s. to 20s., and of sheep 1s. 6d. to 2s. 6d. each. During the last year, the leg-bones of upwards of 109,000 oxen were sent over to England, the greater part of the flesh of the animals having been thrown away. The object of the present manufacture is to reduce the lean of the carcass into a solid portable soup, by stewing it down in its own gravy, without water, in double pans. By reducing it in this way, the water in the lower pan prevents the fire passing through and giving to the soup the burnt flavor which it has always hitherto had. When manufactured, it is sold in cakes of various sizes, at the rate of 2s. per pound. One pound of the soup is said to be equal to 24 pounds of the best gravy beef.—*Id.*

THE MAY-FLOWER, or Trailing Arbutus (*Epigaea repens*), the provincial emblem of Nova Scotia, is to that country what the rose is to England, and the shamrock to Ireland. Like the snow-drop in England, its modest and lovely blossoms are first to herald the departure of winter and the return of spring. By the latter end of March, or early in April, in the State of New York, and gradually for a month or six weeks later as we progress northward, visitors to sylvan scenes may be seen bringing home a few solitary specimens of the "promised bouquet;" but immediately after this, especially after the first warm rains of spring, they may be found in great profusion near the borders of dry open woods, from Schenectady in New York to Nova Scotia and Newfoundland. It is a beautiful, small flower, most frequently white, but sometimes blushing through every intermediate shade till it reaches the hue of the rose. It grows close to the ground, and like the violet, is almost covered with its own leaves, but may be immediately detected by its rich perfumes.

We know of no reason why this beautiful emblem of spring may not be cultivated in our gardens and cultivated grounds; and as the season is at hand for selecting roots or seeds, we hope some of our northern friends will make the experiment.

CURSE OF THE POTATOE CROP IN IRELAND.—Cobbett prophesied in 1826 that in twenty years the exclusive cultivation of the potatoe would be the curse of Ireland. He said, "the potatoe will not last more than twenty years, when it would work itself out, and then you will see to what a state Ireland will be reduced. You must return to grain crops; and Ireland, instead of being the most degraded, will become one of the first countries in the world."

N. Y. STATE AGRICULTURAL SOCIETY.

At a meeting of the Executive Committee at Albany, March 11th, letters were read from various persons, among which was one from Geo. Geddes, of Fairmont, in relation to experiments with Indian corn, to ascertain its value for fattening animals, &c., and another from A. L. Fish, of Herkimer county, in relation to the analysis of soils and grasses, and the testing of the qualities of milk of different cows for dairy purposes. [The Secretary was directed, after consultation with Prof. Emmons, to answer inquiries.]

Fruit.—The following resolution was adopted for the government of the committees on fruit:—

Resolved, That the work entitled *The Fruits and Fruit Trees of America*, by A. J. Downing, be the established authority of the N. Y. S. Ag. Society, in classifying the varieties and nomenclature of fruits in our future exhibitions.

A. J. Downing, of Newburgh, and J. W. Bissell, of Rochester, were added to the committee on fruit, appointed under the resolution of last year and continued at the last annual meeting. The other members of the committee are Lewis F. Allen, of Buffalo, chairman; Samuel Young, of Saratoga; and Herman Wendell, of Albany.

The President stated that he had, in company with the Secretary, visited Saratoga Springs, at the request of gentlemen of that place, and had examined various locations proposed for the show grounds of the Fair, in September; that several of these were in the highest degree eligible, and that advice had been given to the members of the executive committee there, as to the location which was most desirable.

The Secretary reported the Premium List, as published, and was authorized to procure 250 copies of the same for distribution. The amount of cash premiums, \$3,004; 131 volumes of agricultural works; 65 volumes Transactions; 59 diplomas, and 15 silver medals; amounting in all to \$3,472.

The Secretary reported that he had received returns from 39 county societies, and that their reports were, in many cases, of very great interest, and that all reports received had been prepared for the Transactions. Only seven societies from which reports had not been received—and that he was in correspondence with the officers of these societies, and expected returns from them all. Only twelve counties in the State in which there were not organized societies.

From these reports it appears that in nineteen counties the yield of Indian corn exceeds 80 bushels to the acre; in 11 counties crops are reported exceeding 100 bushels. The largest yield in—

Cortland county, of.....	154 bushels.
Oswego "	146½ "
Orange "	139 "
Tioga, "	125 "
Oneida, "	123½ "

The largest yield of Wheat is from Ontario, a fraction short of 60 bushels per acre, on upwards of 3 acres.

In eight counties the yield of Oats exceeded 70 bushels per acre. The largest yield, 102 bushels, in Oneida.

A premium of \$5 awarded to Jesse Babcock, of Volney, Oswego county, on Barley, 54 bushels 8 lbs. per acre.

To Henry Brewer, of Enfield, Tompkins county, a premium of \$10, for best two acres of clover seed, 5½ bushels per acre.

Satisfactory reasons were given to the committee as to the delay attending the production of the papers in the above cases at the annual meeting.

B. P. JOHNSON, *Secretary.*

REVIEW OF THE MARKET.

PRICES CURRENT IN NEW YORK, MARCH 24, 1847.

ASHES, Pots,	per 100 lbs.	\$4 87	to	\$5 00
Pearls,	do.	6 25	"	6 31
BALE ROPE,	lb.	5	"	6
BARK, Quercitron,	ton,	35 00	"	40 00
BEANS, White,	bush.	1 25	"	1 75
BEESEWAX, Am. Yellow,	lb.	26	"	30
BOLT ROPE,	do.	11	"	12
BONES, ground,	bush.	40	"	55
BRISTLES, American,	lb.	25	"	65
BUTTER, Table,	do.	16	"	25
Shipping,	do.	9	"	15
CANDLES, Mould, Tallow,	do.	9	"	11
Sperm,	do.	25	"	38
Stearic,	do.	20	"	25
CHEESE,	do.	5	"	10
COAL, Anthracite,	2000 lbs.	5 50	"	6 00
CORDAGE, American,	lb.	11	"	12
COTTON,	do.	10	"	14
COTTON BAGGING, Amer. hemp,	yard,	11	"	14
FEATHERS,	lb.	25	"	34
FLAX, American,	do.	7	"	8
FLOUR, Northern and Western,	bbl.	6 50	"	7 12
Fancy,	do.	7 00	"	7 25
Southern,	do.	6 38	"	7 00
Richmond City Mills,	do.	8 00	"	8 50
Buckwheat,	do.	4 00	"	4 25
Rye,	do.	4 75	"	4 88
GRAIN—Wheat, Western,	bush.	1 65	"	1 75
Southern,	do.	1 60	"	1 65
Rye,	do.	90	"	91
Corn, Northern,	do.	90	"	95
Southern,	do.	85	"	90
Barley,	do.	70	"	75
Oats, Northern,	do.	46	"	50
Southern,	do.	40	"	44
GUANO,	do.	2 50	"	3 00
HAY, in bales,	100 lbs	50	"	56
HEMP, Russia, clean,	ton.	240 00	"	245 00
American, water-rotted,	do.	105 00	"	185 00
American, dew-rotted,	do.	75 00	"	125 00
HIDES, Dry Southern,	do.	9	"	10
HOPS,	lb.	8	"	10
HORNS,	100.	2 00	"	10 00
LEAD, pig,	do.	4 25	"	4 31
Sheet and bar,	lb.	44	"	54
MEAL, Corn,	bbl.	4 88	"	5 00
Corn,	hhd.	20 00	"	22 50
MOLASSES, New Orleans,	gal.	35	"	37
MUSTARD, American,	lb.	16	"	31
NAVAL STORES—Tar,	bbl.	1 75	"	2 00
Pitch,	do.	88	"	1 06
Resin,	do.	50	"	60
Turpentine,	do.	2 50	"	3 00
Spirits Turpentine, Southern,	gal.	38	"	43
OIL, Linseed, American,	do.	77	"	80
Castor,	do.	75	"	80
Lard,	do.	85	"	90
OIL CAKE,	100 lbs.	1 50	"	1 75
PEAS, Field,	bush.	1 25	"	1 75
PLASTER OF PARIS,	ton.	2 25	"	3 00
Ground, in bbls.,	of 300 lbs.	1 12	"	1 25
PROVISIONS—Beef, Mess,	bbl.	10 00	"	12 00
Prime,	do.	8 50	"	9 50
Smoked,	lb.	7	"	11
Rounds, in pickle,	do.	5	"	7
Pork, Mess,	bbl.	12 50	"	15 00
Prime,	do.	12 00	"	13 25
Lard,	lb.	10	"	11
Bacon sides, Smoked,	do.	6	"	8
In pickle,	do.	5	"	7
Hams, Smoked,	do.	8	"	12
Pickled,	do.	6	"	10
Shoulders, Smoked,	do.	6	"	8
Pickled,	do.	5	"	7
RICE,	100 lbs.	3 25	"	4 75
SALT,	sack,	1 25	"	1 35
Common,	bush.	20	"	35
SEEDS—Clover,	lb.	8	"	10
Timothy,	7 bush.	18 00	"	25 00
Flax, clean,	do.	10 25	"	11 25
rough,	do.	10 50	"	11 50
SODA, Ash, cont'g 80 per cent. soda,	lb.	3	"	3
Sulphate Soda, ground,	do.	1	"	—
SUGAR, New Orleans,	do.	64	"	9
SUMAC, American,	ton,	35 00	"	37 50
TALLOW,	lb.	8	"	9
TOBACCO,	do.	2	"	7
WHISKEY, American,	gal.	27	"	28
WOOLS, Saxony,	lb.	35	"	60
Merino,	do.	25	"	30
Half blood,	do.	20	"	25
Common do,	do.	18	"	20

REMARKS.—We have few alterations to make in our Price Current this month. Pearl a-shes have advanced about 75 cents, Flour 1½ cts., Wheat 5 cents, Corn has fallen 5 cents, Barley and Rye nearly the same. The market is very active, and large shipments of produce are continually going forward. The famine still continues in Europe.

Money is abundant. Large importations of specie are made by every steamer.

The Weather, though mild and open here, continues cold north and west of us. In consequence of the open winter, wheat has suffered materially, and present appearances are not favorable for a large crop. We hear some complaints of the worm among the Cotton. An unusual breadth of land is being planted in Cotton, Corn, Rice, and Sugar. If the country is favored with tolerable weather, the product of these great staple articles will be very large the coming season.

TO CORRESPONDENTS.—Communications have been received from Solon Robinson, J. H. D., R. L. Allen, A. Beatty, Old Lady, W. D., Archibald Jayne, J., and Duchess County Agricultural Institute.

ACKNOWLEDGMENTS.—List of Premiums offered by the Washington County Agricultural Society to be awarded at their next Fair to be held at Montpelier, Vt., Oct. 1, 1847.

PEACH AND OTHER FRUIT TREES.

30,000 PEACH TREES of vigorous growth, 6 to 7 feet in height, comprising twenty of the best leading varieties for market, will be supplied at \$12 per 100, or \$160 per 1000, for cash, remitted with the order. The Matting will be \$2 per 100.

PEAR TREES of all the leading varieties, 8 to 9 feet high, with heads, at \$18 per dozen, and others, averaging 5 feet, at \$50 per 100. Pears untrimmed, for Quenouilles or Dwarfs, 2 years grown, \$9 per dozen; and three years in a bearing state, \$12 per dozen; 2000 Newtown Pippins and Baldwin Apples, and 20,000 of the other choice varieties, 6 to 7½ feet, at \$30 per 100.

10,000 Orange and Angers QUINCES, the finest varieties, from 3 to 5½ feet in height, at \$20 to \$30 per 100.

A great stock of Plums, Cherries, Nectarines, Gooseberries, Raspberries, Currants, &c., at low rates by the quantity.

30,000 Isabella, Catawba, and other American GRAPES, for Vineyards and Market, and 5000 Foreign Grape Vines for Grape Houses, &c., all at lower rates than ever before offered.

The accuracy of every article is expressly guaranteed; and we refer to every distinguished amateur for the precision with which all orders are executed by us. Priced Catalogues sent to every post paid applicant.

PRINCE'S LINNEAN GARDEN AND NURSERIES, FLUSHING.

N. B. The Public are cautioned against a spurious use of our name and title.

CRANBERRY PLANTS.

PERSONS wishing to engage in the cultivation of the Cranberry the present Spring, can be supplied by the subscriber on the following terms:—\$3.50 the 1000, cash down, and \$3.50 the 1000 at such times as the fruit grown on the plants will amount to it, this being my circular price \$7.00 per 1000. Or the first mentioned sum and one half the price of the fruit grown on the plants the second Fall after transplanting.

Persons wishing for a circular to give them the necessary information as to the cultivation of the Cranberry, will receive one by return mail by addressing the subscriber by mail, post paid.

alt SULLIVAN BATES, Bellingham, Norfolk Co., Mass.

HALL'S EARLY JUNE POTATOES.

THESE Potatoes are a distinct variety from other kinds called *Early Junes*, and are said to be far superior. They are "earlier than the earliest, and for the table inferior to none." Price \$1.75 per bushel, or \$4.00 per bbl. of two and a half bushels each.

A. B. ALLEN & CO., 187 Water st.

TO EMIGRANTS.

ONE Hundred Thousand Acres of Illinois land for sale, in lots to suit purchasers, from 80 acres and upward. These lands are of a choice quality, and are eligibly located in the most flourishing Counties of the State.

A. B. ALLEN & CO. 187 Water street, New York.

ICHABOE GUANO.

TWO Hundred Tons Ichaboe Guano, balance of Ship Shakspeare's cargo, the best ever imported in this country, for sale in lots to suit purchasers, by

E. K. COLLINS,
56 South street.

PERUVIAN GUANO FOR SALE.

THE Peruvian Company have directed their agent in the United States, Mr. Bartlett, to raise the price of Guano to \$50 per ton, it will now be sold by us at the following prices:—

One ton or more.....2½ cts. per lb.

Smaller quantities.....2½ to 3 " do.

No allowance for tare, and no charge for packages. Cartage extra.

This Guano is warranted genuine, and direct from the Peruvian Company's agent. A. B. ALLEN & CO., 187 Water-street.
January 25th, 1847.

RECENT PUBLICATIONS

ON AGRICULTURE, DOMESTIC ECONOMY, &c.
BY HARPER & BROTHERS,
82 Cliff Street, New York.

BRANDE'S ENCYCLOPÆDIA OF SCIENCE AND ART; A Dictionary of Science, Literature, and Art; comprising the History, Description, and Scientific Principles of every Branch of Human Knowledge; with the Derivation and Definition of all the Terms in general Use. Edited by W. T. Brandle, F. R. S. L. and E., assisted by Joseph Cauvin, Esq. The various Departments by eminent Literary and Scientific Gentlemen. Illustrated by numerous Engravings on Wood. 8vo, Sheep extra. \$4.00.

It will prove of the greatest value as a book of reference, and deserves to find a place on every library table. Clear and authentic, copious without prolixity, it furnishes an explanation of facts and terms, and a development of principles well illustrated and explained.—*London Times*.

An admirable work, supplying what all scientific and literary men must have long felt to be a desideratum in our literature. He who has no encyclopædia will find it an excellent substitute for one, and he who has will find a valuable supplement.—*Eclectic Review*.

CHAPTAL'S CHEMISTRY APPLIED TO AGRICULTURE; With a preliminary Chapter on the Organization, Structure, &c., of Plants, by Sir Humphrey Davy. An Essay on the Use of Lime as a Manure, by M. Puvion; with introductory Observations to the same, by Prof. Renwick. Translated and edited by Rev. Wm. P. Page. 18mo, half Sheep. 50 cents.

COCK'S AMERICAN POULTRY BOOK; Being a practical Treatise on the Management of Domestic Poultry. Engravings. 18mo, Muslin. 35 cents.

ARMSTRONG'S TREATISE ON AGRICULTURE; Comprising a concise History of its Origin and Progress; the present Condition of the Art Abroad and at Home; and the Theory and Practice of Husbandry. With Notes by Jesse Buel. To which is added a Dissertation on the Kitchen and Fruit Garden. 18mo, half Sheep. 50 cents.

BEECHER'S (Miss C. E.) TREATISE ON DOMESTIC ECONOMY; For the Use of Young Ladies at Home and at School. Revised Edition, with numerous Additions and illustrative Engravings. 12mo, Muslin gilt. 75 cents.

We entreat every father who loves his daughters, and desires to promote the comfort of his family, to procure this book.—*Baltimore Commercial Advertiser*.

BEECHER'S (Miss C. E.) HOUSEKEEPER'S RECEIPT-BOOK; Designed as a Companion to the "Treatise on Domestic Economy." 12mo, Muslin. 75 cents.

Practically studied, this book is better than most boarding schools, with their long train of accomplishments.—*Democratic Review*.

It is highly useful and practical, conveying in a simple straightforward style the results of actual observation and experience.—*News*.

ORANGE COUNTY SCIENTIFIC AND PRACTICAL AGRICULTURAL INSTITUTE.

THE Summer Session of this Institute will commence on the 1st of April next. Inquiries and applications for admission may be addressed to

LINDLEY M. FERRIS, Pres't, Coldenham,
S. WAIT, Jr., Sec'y,
or JAMES DARRACH, Scientific Instructor,
Walden, Orange Co.

Entire charges, \$175 per annum.

References—F. I. Betts, Esq., Newburgh; I. Caldwell, Esq., Salisbury, Or. Co.; Hon. John Wethered, Baltimore, Md.; A. B. Allen, Esq., Ed. Am. Agriculturist, Wm. Partridge, Merchant, New York; Peter H. Schenck, Esq., Matteawan; Hon. Morris Franklin, N. Y. Officers of American Institute. alt

SENECA LAKE FARM.

AN excellent and beautiful Farm for sale, lying on the east side of Seneca Lake, in Seneca County, N. Y., about seven miles south of Geneva, containing about 150 acres of the best quality of land. There are about 50 acres of excellent wood and timber land, and the arable and meadow land is of the first quality and in good condition. Lowest price, \$50 per acre. The one-half of the purchase money may remain on bond and mortgage for many years. Title good. The farm may be viewed at any time. Apply to RICHARD DEY, on the premises, or to JAMES A. DEY, No. 51, Liberty street, New York, or to JACOB C. DEY, Fulton street, Brooklyn.

Fayette, N. Y., February 16th, 1847.

CREAM HILL AGRICULTURAL SCHOOL.

THE Summer Term of the Cream Hill Agricultural School will commence the 1st Wednesday in May. The design is to give instruction to a limited number in Practical and Scientific Agriculture and Horticulture, Theoretical and Practical Surveying, Chemistry, Botany, and the kindred Sciences.

T. S. GOLD.
a2t

West Cornwall, April 1st, 1847.

JERUSALEM ARTICHOKE.

JERUSALEM ARTICHOKE of the best kind, for sale. Price \$1.50 per bushel.
A. B. ALLEN & CO.

**IMPORTANT TO FAMILIES.
GUNN'S DOMESTIC MEDICINE,
OR POOR MAN'S FRIEND,**
(Raymond's Copy.)

FOR SALE BY C. M. SEXTON, 205 BROADWAY, N. Y.

THIS valuable work has gone through many heavy editions, most of which were circulated in the Southern and Western States. Raymond's copy is a revision and correction of the original work, with a good deal of valuable new matter added by the author; it is printed on fine paper, and well bound. Each copy is accompanied with the recommendations of some of the most distinguished medical professors and practitioners in our country; much of it being selected from the practice of the most celebrated medical men of Europe and America, viz:

America—Drs. Rush, Physic, Brown, Chapman, Dorsey, Davis, Mott, Hosack, M'Nevin, Mitchell, Anderson, Eberle, Drake, Pattison, Hereford, Wharton, Manlove, McDowell, Foote, Powell, Goodman, McConnochie, Wellford, Archer, King, Fisher, Bigelow, Kinlock, Hopkins, Cutler, Sigmond, Cutbush, Jenner, Paris, Tennant, Storck.

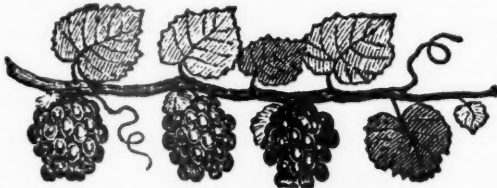
Europe—Drs. Dunglison, Cook, Bell, Reece, Astley Cooper, Gardiner, Abernethy, Harnett, Johnson, Carmichael, Dick, Currie, Tate, Balfour, Thomas, Holme, Payne, Drury, Ellison, Bardsley, Cook, Ainslee, Fleming, Hamilton, Sully, Sigmond, Churchill, Baker, Cumming, Bardsley, Williams, Poqueville, Marcet, Cloquett, Le Fevre, De Haen, Galen, Helbig, Strum, Dryden, Percival, Coindet, Hufeland.

The diseases peculiar to both cold and warm climates are plainly described, with the means to be used in their cure; in short it is the regular practice of medicine, wholly divested of all professional or doctor's terms, and is intended chiefly for the use of families, managers of farms and plantations, ship-masters, manufacturers, &c., pointing out in plain and simple language for preventing as well as curing contagious diseases, and prolonging human life.

It also contains descriptions of the medicinal roots and plants of the United States, and the manner of using them in the cure of diseases, arranged on a new and simple plan.

Price—Single copies, \$3.00. Four copies, \$10.00. Eleven copies, \$25.00.

Agents wanted to sell the above work, to whom a liberal discount will be made. Inquire, post paid, of C. M. SEXTON, 205 Broadway.



ISABELLA GRAPES

OF proper age for forming vineyards, propagated from and containing all the good qualities which the most improved cultivation for over ten years has conferred on the vineyards at Croton Point, are now offered to the public. Those who may purchase will receive such instructions as will enable them to cultivate the Grape with entire success (provided their location is not too far north.) All communications, post-paid, addressed to R. T. UNDERHILL, M.D., 326 Broadway, New York, will receive attention. He feels quite confident that he has so far meliorated the character and habits of the Grape-Vine in his vineyards and nurseries, by improved cultivation, pruning, &c., that they will generally ripen well and produce good fruit when planted in most of the northern, and all the western, middle, and southern states. New York, March 1, 1847. 2t

IMPERIAL OATS.

A FEW barrels of these superior oats just received and for Sale. Price \$4 per bbl. They are great yielders, remarkably free from husk, and weigh over 40 lbs. per bushel.

A. B. ALLEN & CO., 187 Water Street, N. Y.

STOCK FOR SALE.

MATCH and single horses, some of which can trot their mile under three minutes, others rack and gallop easily, making admirable saddle-horses for ladies and gentlemen; Durham, Devon, Hereford, and Ayrshire Cattle; Merino, Saxon, Southdown, and Leicester Sheep; the large white English breed of Swine, Berkshires; Poultry, &c., &c. Apply to

A. B. ALLEN & CO., 187 Water Street.

PERUVIAN GUANO.

PERUVIAN GUANO, received direct from the Chincha Islands and shipped by special authority of the government of Peru. All that is sent to this country is thus shipped by the Guano Company, and is consigned to the subscriber. It will be received by him at New York, or by SAMUEL K. GEORGE, at Baltimore. Any other Guano offered as Peruvian, is spurious. The price, in quantities not less than twenty-five tons, is \$50 per ton.

3tm

EDWIN BARTLETT, 42 South-street.

PRAIRIE FARM FOR SALE.

640 ACRES PRAIRIE LAND, in Sangamon County, Illinois, 8½ miles W.S.W. of Springfield, the capital of the State of Illinois. The land is pleasantly situated, in a respectable and healthy neighborhood, well watered with never falling streams, and of very rich soil, convenient to timber both on the north and south side; the railroad from Springfield to the Illinois river (which is 35 miles distant) goes through the land. Farms in the vicinity are well supplied with all the varieties of cultivated fruit, some having been in cultivation more than 20 years. Mills, churches, and schoolhouses are convenient. Stone coal can be bought at the pits within five miles from 2 to 3 cents per bushel. Lumber is worth from 10 to 12 dollars per M. Well water is excellent. Quarries of lime-stone and sand-stone are in the vicinity. Hands for farm labor as well as mechanics can be had at moderate wages.

The land was personally surveyed and selected by the son of the owner, after a prolonged search through what is called the garden of Illinois, and would have been improved and occupied by the owner and his family, had not unexpected occurrences prevented.

Price, \$3.50 per acre, one-fourth cash, the balance on time as the purchaser may wish. For further particulars apply to

A. B. ALLEN & CO., 187 Water st., N. Y.

AMERICAN AGRICULTURE,

BY R. L. ALLEN.

THE cheapest and most valuable book for a Farmer ever printed; being a complete guide, both practical and scientific, for the management of the Farm. Containing a concise and plainly written exposition of the general duties pertaining to the cultivation of the Earth, the breeding of Live Stock, &c., &c.

The reader can form some idea of what he is going to buy, from the fact that this work treats, in a plain practical manner, of upwards of Eight Hundred different subjects, important to the Farmer, the Planter, the Stock Breeder, and the Horticulturist. It also touches on Geology, Chemistry, Botany, Anatomy, Physiology, and Mechanics, as applicable to Agriculture.

This book contains 437 pages, beautifully bound in cloth gilt, suitable for a library. It would be a most valuable premium for distribution among Agricultural Societies, to which, and to the Trade, a liberal discount would be made. Price only one dollar.

For sale by
if

A. B. ALLEN & CO., 187 Water st., and
C. M. SEXTON, 205 Broadway, N. York.

FOR SALE AT A SACRIFICE.

A RICH VALLEY FARM, containing 123 acres, situated on the north side of Long Island, 3½ miles from Cold Spring Harbor, and 5 miles from railroad depot. Produces in abundance all kinds of Grain and Grass, the buildings and fences are in first rate order, the prospect very fine, and one of the most healthy locations on the Island. The stock, farming utensils, and winter grain will be sold with the Farm if the purchaser wishes. One half of the purchase money can remain on bond and mortgage at 6 per cent. for a number of years, or would be exchanged for good city property. Inquire of

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C. M. SEXTON, 205 Broadway.

WANTS A SITUATION.

A PRACTICAL GARDENER.—Has a general knowledge of Horticulture and the Formation of Picturesque Scenery.

W. WHEDDON, Gardener to C. Kneeland,

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Bay Side, Flushing.

INOCULATED PEACH-TREES.

AN Assortment of the best varieties. Also a few trees not inoculated, raised from stones brought from South America.

ASPARAGUS ROOTS of two and three years thrifty growth.

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For sale by ISAAC ROOSEVELT, Pelham,
New Rochelle P. O., N. Y.

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THE subscriber has just opened an Agricultural Warehouse at New Orleans, where he will constantly keep on hand a very general assortment of plows suitable for the Southern planter, together with harrows, rollers, cultivators, horse-powers, grain threshers, rye threshers and hulling machines, fanning mills, burr stone and cast iron grain mills, corn and cob crushers, corn shellers and huskers, vegetable cutters, straw cutters, seed sowers, wheelbarrows, trucks, grain cradles, ox yokes, shovels, spades, forks, scythes, rakes, axes, hoes, picks, chains, churns, grindstones, &c., &c.

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